A STUDY ON

PITHA THALAINOKKAADU

(SINUSITIS)
DISSERTATION SUBJECT

Submitted to

THE TAMIL NADU
DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI – 600 032.

For the partial fulfilment of the
requirements to the degree of

DOCTOR OF MEDICINE (SIDDHA)
BRANCH-I – MARUTHUVAM

POST-GRADUATE DEPARTMENT OF MARUTHUVAM
GOVERNMENT SIDDHA MEDICAL COLLEGE
CHENNAI-600 106

MARCH – 2008

Certificate

This is to certify that I have gone through the dissertation submitted by **Dr. M. Arockia Nirmala Nancy** a student of Final M.D. (Siddha) Branch-I Maruthuvam of Government Siddha Medical College and the dissertation work "**PITHA THALAINOKKAADU"** (Sinusitis) has been carried out by the individual only. The dissertation does not represent or reproduce the dissertation submitted and approved earlier.

Place:Chennai
Date:

Professor and Head of the Department
Branch- I Maruthuvam
Government Siddha Medical College
Chennai – 106.

Acknowledgement

ACKNOWLEDGEMENT

At the outset, I offer my humble and prayerful thanks to Him, the Almighty God, who had blessed and guided me in all my efforts to complete this dissertation.

It is my bounden duty to acknowledge my gratitude to the respected Principal, **Prof. Dr. S.P. Pandi Perumal M.D(S)** who had been helpful in completing my dissertation.

I would like to express my indebtedness to my beloved **Prof. Dr.K. Rajarathinam (a) Revathi M.D(S)** Vice Principal and Head of the Department (Maruthuvam) of Post Graduate Department of Govt. Siddha Medical College, Chennai – 106, for showing much interest and giving efficacious suggestions so that I could complete my dissertation successfully.

I express my sincere thanks to **Dr. P. Parthiban M.D(S)** and **Dr.K. Kanagavalli M.D(S)** lecturers in Post Graduate Department of Govt. Siddha Medical College, Chennai who had been ever ready to give timely advice, fruitful suggestions and encouragement given throughout my dissertation.

I owe my gratitude to **Dr. S. Ramalakshmi Ammal B.I.M,** Medical Officer for her help of great value for completing my dissertation.

I extend my gratitude to **Prof. Dr. L. Pari MD (Medicine)** for his support.

I am grateful to **Prof. Mr. S. Selvaraj Msc.Mphil,** Head of the Department (Biochemistry), Govt. Siddha Medical College Chennai, who helped me for Bio-Chemical analysis of this study.

I express my sincere thanks to Retd. **Prof. Dr. M.K. Balasubramanian M.sc,Phd,** Head of the department (Bio-Chemistry) of Madras Medical College, Chennai for his timely help in Microbiological studies.

I also convey my cordial thanks to **Dr. A. Jaswanth M.Pharm,Phd** Head of the Department (Pharmacology) Periyar College of Pharmaceutical Sciences for girls, Trichy for the Pharmacological Studies.

I sincerely express my thanks **to Dr. P. Vidhya M.B.B.S, DMRD** who helped me in Radiological study.

I wish to convey my cordial thanks to **Thiru.V.Thandayuthapani M.com,M.Lib** who helped me a lot by lending important books on the relevant subjects.

I sincerely thank the **staff members** and **colleagues** who came forward willingly to extend their co-operation for my dissertation work.

With a deep sense of gratitude I thank **Ms. M. Ponni** for computerizing my manuscripts and **Mr. Jayavel** who helped me for the photographic pictures.

I express whole heartedly my gratitude to my beloved parents **Mr. A. Maria Joseph** and **Mrs. Evelyn Joseph**, daughter **M.C. Jenifer** and my husband **Dr. P. Muthukrishnan DHMS**, whose unflinching efforts and loving co-operation had seen this work to its fruition.

Contents

CONTENTS

Introduction

INTRODUCTION

Health is man's greatest wealth, which means that he who has health must cherish it with care, lest he should lose it. The fast phase of today's lifestyle has led everybody to undergo constant pressure. People are nowadays taking more interest in maintaining good health and well-being.

"Every human being is the author of his own health or disease." Buddha Quote.

With constant increasing of population, diseases are also parallely increasing day-by-day. Inspite of the various advancements in the field of medical sciences and technology, the humanity is left with more challenging and life-threatening problems that are yet to be answered. As the environment is getting more and more polluted, the humanity has almost come to a stage, where the various preventive measures are to be revalued, much better than the existing curative measures just as the proverb means "A stitch in time saves nine".

Abidhaana Cinthamani, the first Tamil Encyclopedia refers to 64 well-defined Tamil Arts, of which the "Arts of Medicine" are unique ones. The Siddha Medicine, one among these arts and notably in vogue for thousands of years in our Tamil speaking region, is a rare gift of wealth to the world.

The Siddha system is the first to emphasize the health, as the perfect state of physical, physiological, social and spiritual components of the human body. It is the contribution of Siddhars on their ownline of thinking and achievements in the field of their research. The word 'Siddha' is derived from the word 'Siddhi' which literally means "Attaining perfection in life" or "Heavenly Bliss."

Siddhars described 96 principles as the constituents of human being, which are nothing but the manifestation of five basic primordial elements. The human

body is not only to enjoy the pleasures of the world, but also to attain the salvation through various means. Hence maintaining the body with good health is a must. Thirumoolar emphasizes the same as,

“clk;gpid Kd;dk; ,Gf;bfd;wpUe;njd;
clk;gpDf;Fs;ns cWbghUs; fz;nld;
clk;g[[nd cj;jkd; nfhapy; bfhz;lhbdd;W
clk;gpid ahdpUe; njhk;g[fpd;nwnd”

- **jpUke;jpuk;** III **- ghly; vz; 725**

According to Siddha system, the human body is a conglomeration of three humours and seven physical components. The food that is considered to be the basic building material of the human body gets processed into humours, tissues and wastes. The equilibrium of humours, body tissues, and waste products is considered good health and its disturbance or imbalance leads to disease or pathologic state.

Saint Thiruvalluvar says,

“kpfpD'; FiwapDk; neha; bra;a[k; E]nyhh;
tsp Kjyh vz;zpa _d;W.”

Fws; vz;. 941

Siddhars classified the diseases into different topics and accounted the total diseases for human body as 4448 diseases. Siddhar Yugimunivar in his classification of 85 types of Vatha diseases, had given a detailed description of **“Pitha Thalainokkaadu”** as one among them. As Yugi’s clinical signs and symptoms of **“Pitha Thalainokkaadu”** along with the humoural pathology are similar to that of “SINUSITIS”, the author wished to select this topic for her dissertation work.

The author has done a preliminary study about the disease and the efficacy of the trial medicines. To treat the **“Pitha Thalainokkaadu**” patients, they were

given three trial medicines selected in the form of internal choornam and nasiyum and oil for bath as externals.

The author feels that she has to devote herself to serve humanity by relieving the sufferings caused by **“Pitha Thalainokkaadu.”**

Aim & Objective

AIM AND OBJECTIVE

AIM

Health is on one hand a highly personal responsibility and on the other hand a major public concern. **“Pitha Thalainokkaadu”** a disease dealt in Yugi Vaithya Chinthamani has clinical features as those of “Sinusitis”.

Sinusitis is one of the most prevalent diseases encountered in general practice. It is a common condition in adults often leading to their disability and consequently their absence from work. It is the fifth most common indication for antimicrobial treatment with incidences increasing rapidly. It has a substantial impact on the economy of families of employees and of health care systems.

The number of diagnosed sinusitis cases is increasing for no apparent reason. Though, no convincing evidence exists to support the role of the environmental pollution and toxicants causing sinusitis, the air pollution, changes in human life style, food habits etc are the predisposing causes for it. These make sinusitis patients visit frequently, the Outpatient Department in Hospitals.

So, the author has selected a treatment regimen for **“Pitha Thalainokkaadu”** and also evaluated its clinical efficacy and has had the study done with the following objectives.

OBJECTIVE :

1. To make a detailed study of **“Pitha Thalainokkaadu”** from various Siddha Literature.

2. To know the extent of correlation of aetiology, classification, symptomatology, diagnostic methods with modern aspect.

3. To have an idea of the incidence of the disease with regard to age, sex, occupation, socio-economic status and precipitating factors etc.

4. To screen the clinical methods of diagnosis by our Siddhars and to know how the disease manifests due to deranged Mukkutram, Pori Pulangal, Udal Kattugal and Envagai Thervugal.

5. To utilize the possible modern diagnostic methods to confirm the diagnosis.

6. To have a Clinical trial on 20 **"Pitha Thalainokkaadu"** patients in I.P and 20 in O.P with the selected trial medicines.

    a. **Peenisa Choornam** (Internal Medicine)
    b. **Kungumapoo Nasiyum** (External Medicine)
    c. **Vettiver Thylum** (External Medicine)

7. To evaluate
    - Bio-Chemical analysis
    - Qualitative and quantitative analysis.
    - $_{P}$H of Nasiyum
    - Microbiological Study
    - Pharmacological studies of
        a. Acute toxicity
        b. Anti-inflammatory
        c. Analgesic

Review of Literature

Siddha Aspect

SIDDHA ASPECT

The head is the chief part of the eight span body. The brain that sustains our body is found well protected inside the head. Of the five sensory organs the eyes, the ears, the nose and the tongue are in our head. The dhasa naadigal and praanan are too found only in our head. So, our great Sages have aptly said that the head is the fundamental part of our body, just as the roots are for a tree. The diseases causing destruction to the root have to be treated and rooted out soon. So, the head ought to be looked after with atmost care.

The disease known as **"Pitha Thalainokkaadu"** afflicting the head is found to be mentioned as one among the Yugis' classification of 85 Vatha diseases. This fact is to be taken note of.

VATHA NOIGAL :

SYNONYM:

Vali noigal

DEFINITION :

1. According to **Yugi** :

When Vatha kutram is deranged it manifests with twitching, throbbing pain, shivering and dysfunctions of all parts of the body and will produce so many diseases.

2. According to **T.V. Sambasivam Pillai**:

Pain in the body caused by wind humour which is aggravated by some bad fluid in the nerves.

CLASSIFICATION OF VATHA DISEASES :

1. According to **Yugi Vaithya Chinthamani**, there are three various schools of thoughts in classification of Vatha noigal.

a. **"jhdhd je;jtha[tpd; jd;ndhL**
jhf;fhd thje;jhd; vz;;gjhFk;" **- neha; ehly; II gf;fk; 503**

as per the above evidence he says of 80 types.

b. Under the same classification, at the end of Vatha diseases he has classified them as 84 types and the evidence is given below.

“Mkg;gh thjbkz;gj;J ehYk;
mjpDila Fzh Fz';fsl';fyhf”

neha; ehly; II gf;fk; 544

c. While explaining the various types of Vatha diseases he specifies them as 85 types.

2. **T.V. Sambasivampillai** mentions 84 types of Vatha diseases in his dictionary. (vol. v. Page-3869)

3. **Agasthiyar** classified

a. 84 types of Vatha diseases in Agasthiya Maha Munivarin Guru Nadi 235 as (Page 10)

“kw;Wnk thjnuhf tifa[k; vz;gj;jpehyhnk”

b. 80 types in “Agasthiyar 2000” (Page 32) as

“ vz;gJ thjkhF kpUtifg; gFj;Jf;fhzpy;”

4. **Theraiyar** explained

a. 80 types in “Theraiyar Vaithya Kaviyam 1500” as

“cw';Fk; thjbkhHpa btz;gJf;F” gf;fk; 89

b. 81 types in “Theraiyar Vagadam.”

“.....nfl;fpy; nyhfkhd thjbkz;gj; bjhd;W”

gf;fk; 71

5. In 4448 Viyathigal 84 types of vatha diseases are dealt with as

“kw;wnk thjnuhfk; tifa[k; vz;gj;J ehny”

gf;fk; 125

6. In Raja Vaithya Bodhini (Page.20) and Anubhava Vaithya Dheva Ragasiyum (Page173) 84 types of vatha diseases were dealt with.

7. In Dhanvanthiri Vaithyam (Page27), Soothamuni Soothiram (Page 6) and Roga Nirnaya Saram (Page40) 80 types were discussed.

AETIOLOGY

1. **Yugi** explained the aetiology of Vatha diseases as :

“vd;dnt thje;jh bdz;gjhFk;
,fj;jpny kdpjh;fSf; bfa;;JkhW
gpd;dnt bghd;jidna nrhu";bra;J
bghpnahh;fs; gpukhziuj; J]\zpj;Jk;
td;dnt tr;brhj;jpw; nrhu"; bra;J
khjh gpjh FUit kwe;j ngh;f;Fk;
fd;dnt ntjj;ij epe;ij bra;jhy;
fhaj;jpw; fye;jpLnk thje;jhnd”
“ jhbdd;w frg;nghL Jth;g;g[iug;g[
rhjfkha; kp";RfpD"; rikj;jtd;dk;
Mbdd;w thwpdJ g[rpj;jyhYk;
Mfhaj; njwyJ Foj;jyhYk;
ghbdd;w gfYwf;fkpuh tpHpg;g[
gl;odpna kpft[Wjy; ghubka;jy;
njbdd;w bkhHpahu;; nkw; rpe;ijahjy;
rPf;fpukha; thjkJ brdpf;Fe;jhnd”

a[{fp itj;jpa rpe;jhkzp gf;fk; 76

- ❖ Breach of trust.
- ❖ Abusing the elderly people and priests.
- ❖ Exploitation of charitable properties.
- ❖ Ingratitude towards mother, father and teacher.
- ❖ Excessive consumption of bitter, astringent & pungent taste foods.
- ❖ Intake of very hot or cold rice.
- ❖ Drinking toddy.
- ❖ Sleeping during daytime and awakening during night.
- ❖ Undue starvation.
- ❖ Lifting or carrying of heavy loads.

2. According to Pararasasekaram : (Page 95)

“bjhHpy;bgW ifg;g[f;fhh;j;jy; Jth;j;jy; tp";R";nrhWk;
goajhk; tuFkw;wg; ige;jpid aUe;jpdhYk;
vHpy;bgw gfYw';fp ,utpdp Yw';fhjjhYk;
kiHepfh; FHypdhny thj';nfhgpf;F';fhnd”

- ❖ Excessive intake of spicy pungent, bitter, astringent foods.

- Excessive intake of millets.
- Daytime sleeping.
- Loss of sleep during night.

“fhznt kpft[z;lhYk; fUJ gl;odptpl;lhYk;
khdidah; fz;nkhfkpw';fpD kpFe;jpl;lhYk;
Mztky'; flk;ik a';fnd tplhjjhYk;”

- Excessive intake of food.
- Starvation.
- Excessive indulgence in sex.
- Ego
- Constipation

“fhy';fs; khwpa[z;Qk; fhhpaj;jhYk; jz;zPh;
rhynt aUe;jpdhYk; re;jpapYk; rhh;e;jhYk;
nfhykhk; g[spg;ig bea;ia Fiwt tUe;jpdhYk;
thy;thh; Kiy ey;yhns thj Kw;g[tpf;Fk; jhnd”

- Irregular diet.
- Excessive intake of water.
- Excessive intake of sour food, ghee.

3. According to **Noi Naadal Noi Mudhal Naadal**– Part I, (Page 22)

“g[sp Jth; tp";R';fwpahw; g{hpf;Fk; thjk;”
Xsp a[th;;ifg; ngwpy; gpj;Jr; rPWk; - fpspbkhHpna
fhh;g;gpdpg;g[tp";rpw; fgk;tp";R ";rl;oujr;
nrug; g[zh; nehaQfhnj”

Sour, astringent tastes which increase the Vatha kutram.

4. **Agasthiyar** indicates karma as the reason for all diseases

“ kdk; g[j;jp kf';fhu rpj;jj;jhny
thuzkha; elj;jp itj;j fh;kj;jhny
te;jjlh nehaJt[kdpjh;f;fhnk”

mfj;jpah;; fd;k fhz;lk; gf;fk; - 9

THALAINOKKAADU

According to **T.V. Sambasivampillai**,

Thalai = head, sky etc.

Nokkaadu = pain, disease etc.

He has defined **'Thalainokkaadu'** as the pain in the head arising from various causes such as changes in the blood composition, disorder of nerves in the head and of three humours in the system, action of the germs etc.

SYNONYM :

SIROROGAM

In **Yugis**' classification of Vatha diseases, he described 10 types of Thalainokkaadu and **"Pitha Thalainokkaadu**" is one among them.

CLASSIFICATION:

1. According to **Yugi Vaithya Chinthamani** 10 types of **Thalainokkadu** are explained as follows :-

1. Vatha Thalainokkaadu
2. **Pitha Thalainokkaadu**
3. Kapha Thalainokkaadu
4. Sanni vatha Thalainokkaadu
5. Raththa pitha Thalainokkaadu
6. Kirumi kantha Thalainokkaadu
7. Suryavartham
8. Chandravartham
9. Karnavartham
10. Oruthalaivathapetham

2. According to **T.V. Sambasivam Pillai** 11 types of Sirorogangal.

(vol: iv Part - I Page 889)

1. Vatha Sirorogam
2. Pitha Sirorogam
3. Kapha Sirorogam
4. Sannipathigam
5. Raththa Sirorogam

6. Saya Sirorogam
7. Kirumi Sirorogam
8. Suriyavartham
9. Anandhavatham
10. Arthaavapethagam
11. Sangasam

3. According to **Roganirnayasaram** 19 types of Sirorogangal. (Page38)

1) Arthapetharogam
2) Suryavartha rogam
3) Sangarogam
4) Sirakamba rogam
5) Kirumi Thalaivali
6) Uthira Thalaivali
7) Vatha Thalaivali
8) Pitha Thalaivali
9) Kapha Thalaivali
10) Thiridosha Thalaivali
11) Thaaruna Rogam
12) Ubasirisha Rogam
13) Arumsikai Rogam
14) Moortha Beedaka rogam
15) Siro Vithirathi Rogam
16) Sirorputha Rogam
17) Indhralutha Rogam
18) Palitha Rogam
19) Kalathi Rogam

PITHA THALAINOKKAADU

SYNONYM :

AZHAL THALAINOKKADU

CLINICAL FEATURES :

According to **Yugi Vaithya Chinthamani** (Page 103)

“tz;ikaha; epw;fpd;w _f;Fj; jhDk;
toe;Jnk ePh;g;gha;;e;J jiyfdj;J
btz;ikaha; tha;ePh; jhd; kpft[_wp
kPwpna cz;zhf;ifg; gw;wp behe;J
jpz;ikaha;r; brtpjdpny Fj;j Yz;lha;r;
rpuRjhd; ghukha; kpff;fdf;Fk;
fz;ikaha;f;; fz;nzhL g[Ut'; Fj;Jk;
fdkhd gpj;jj;jpd; jiynehf;fhnl”

1. Rhinorrhoea.
2. Heaviness of head.
3. Excessive salivation.
4. Throat pain.
5. Pain in the ear.
6. Pain in the medial canthus of the eye and eyebrow region.

AETIOLOGY :

1. In **Siddha Maruthuvanga Surukkam** the author said that suppression of 14 Vegams (Normal reflexes) will produce diseases. When the following vegams are suppressed the diseases of the head will occur.

a. **THUMMAL** (sneezing)

“Jk;kiyj; jil jhd; bra;jhy;
bjhLj;jpLk; jiyneha; cz;lhk;” gf;fk; 73

b. **MALAM** (Defaecation)

“kykJ alf;fpdhny
jiytyp kpft[z;lhFk;” gf;fk; 75

c. **NITHIRAI** (Sleep)

“epj;jpiu al';fpg;;nghf
epj;;jKk; jiyfdg;g[” gf;fk; 79

d. **VIZHINEER** (Lacrimation)

“tpHpapdpy; ePulf;fpy;
mGfpLk; rpurpy; nuhfk;”
gf;fk; 81

2. In **Pararasasegaram** – Siroroganithanam the author explains the aetiological factors for diseases afflicting the head as, (Page.97)

“fdj;jpLk; RikapdhYk; fLbtapw; gLjyhYk;
eidj;jpL bkz;bza; jd;idehl;gl KGfyhYk;
g[df;bfho kley;yhiu tplhJwk; g[yfyhYk;
rpdj;jo gLjyhYk; rpuRneha; nrUk;jhnd
,Ubrtp ehrp a{nl <Kjy; VwpdhYk;
KUftpH; FHyPh; fhdw;Ridapil _H;fpdhYk;
kUtpa yfhpnaJ kapYw mUe;jyhYk;
rpukpir mndfnjh\"; nrh;e;jpL jpUtpd; ey;yha;”

- Carrying heavy weight on the head.
- Exposure to the scorching Sun.
- Avoiding oil bath.
- Frequent sexual activity.
- Head injury.
- Small insects like flies enter the nose or ear.
- Taking bath in mountain spring water.
- In take of toxic substances like alcohol, cannabis etc.

3. In **Roganirnayasaram** (Page 37)

- Excessive sexual activity
- Insufficient sleep
- Smoking
- Exposure to chill weather and scorching Sun are the main factors to produce Sirorogangal.

4. Agasthiyar in **“Agathiyar Kanma Kaandam”** (Page 98)

“ gfUntd; kz;ilapny fug;ghd;fl;Lk;
gfuhpa gPdpr';fspuzj;njh
epfhpy;yhbthU jiyneha; kz;ilf;Fj;Jk;
eprkhf te;jfd;kk; eprkha;f;nfS
jfunt fhaoj;j ypiygwpj;jy;
jsph;bfhGe;J jiHKwpj;jy; gl;ilbtl;ly;
epfhpy;yhg; g{g;gwpj;jy; nth;bfhofs;btl;ly;
epidt[bfl;Lr; rPtbre;J jidaoj;jyhny”

5. According to **Sarabendrar Siroroga Sikitchai** the following factors are responsible for Sirorogangal. (Page 28)

- Smoke pollution.
- Exposure to the sun.

- Playing in water excessively.
- Exposure to moist weather.
- Suppressing 14 Vegangal.
- Excessive drinking of water, alcohol.
- Avoiding oil bath.
- Inhaling the allergic substances.
- Eating allergic foods.

NOI KANIPPU VIVATHANGAL :

Ref : a[{fp itj;jpa rpe;jhkzp - gf;fk; 103-106

I. VATHA THALAINOKKADU

“rhj;jpakhk; thjj;jpd; jiynehf;fhL
jz;ikahk; gplhp gw;wp j;jiy neht[z;lhk;
fhj;jpukha;f; fhjpuz;Le; jhd;typj;Jf;
fJg;goa['; Fwl;nlhL _f;F cr;rp
nej;jpa[kha; bew;wpnahL neht[khfp
beUf;fh'; dthg; goe;jhw; nghny Fw;Wk;
khj;jpakha; kdf;fp nyrg;gLj;Jk;
thjj;jpd; jiy neht[tz;;ikjhnd”

- Occipital headache.
- Ear pain.
- Spasm on the side of the face.
- Severe pricking pain in the nose and forehead.
- Psychological disturbances.

II. KAPHA THALAINOKKADU

“nehf;fhl;oy; kpfj; jz;zPh; Fof;ifahYk;
Efh;e;jgpd;g[cythkw; gLf;if ahYk;
jPf;fhl;oy; kpfj;jpuz;L nrl;ge; Jd;d;pr;
rpubr';Fk; nehthfpg; gplhp nahL
ntf;fhl;oy; clk;bgy;yh kpfbtSj;J
nkdpa[nk kpft[yh;e;J RuKz;lhFk;
rhf;fhl;oy; grpaw;W Urpapy; yhjjha;r;
rz;lhsr; nrj;Jkj;jpd; jiynehf;fhnl”

- Drinking too much of water while sick.
- Going to bed immediately after eating.
- Occipital headache
- Paleness and dry

- Fever
- Anorexia
- Loss of taste

III. SANNI VATHA THALAINOKKAADU

“jiynehf;fhlhfpna kpftUe;;jp
r";ryj;jhy; kdf;fpnyre;jhD Kz;lha;
kiynehf;fha; be";rilj;Jg; bgU_r;rhfp
kWfhjp uz;odpyhg; goj;jhw; nghYk;
g[iynehf;fha; tha;jhDk; ngrbthl;lhg;
g[Gf;fs; jhD]h;jy; nghw;nw fkhFk;
fiynehf; fha[zh;r;rpawp tpy;yhjhFk;
fdrd;dp thjj;jpd; jiy nehf;fhnl”

- Psychological disturbances.
- Tightness of chest.
- Dyspnoea.
- Headache.
- Earpain
- Loss of speech
- Sensation of worms crawling on the skin.
- Loss of consciousness.

IV. RATHTHAPITHA THALAINOKKAADU

“rd;dpaha;f; Fsph;e;Jnk btr; brd;whFk;
jhfnk kpft[z;lha; kaph;f; Tr;rhFk;
jpd;dpahe; jpkph;jpkph;j; jpuj;j kPwpr;
brtp _f;Fthahny uj;jk; tPGk;
cd;dpah a[lyJjhd; Jog;g[z;lhFk;
Cf;fkha; RthrkJ bkj;jthFk;
fd;dp ah"; rhPukJ fUfyhFk;
fjpj;bjGe;j uj;j gpj;jj; jiy nehf;fhnl”

- Headache.
- Coldness.
- Increased thirst.
- Gooseflesh.

- Numbness.
- Bleeding per nostril, ear, mouth.
- Twitching.
- Slow breathing.
- Blackening of the body.

V. KIRUMI KANTHA THALAINOKKAADU

“fjpj;Jnk bksyp gw;wpj; jiyneht[z;lhk;
fo_f;Fj; jz;L g[Utk; typf;Fk;
tjpj;Jnk tha;ePh; jhd; kpft[_Wk;
totbky;yhk; nehthfp kdkWf;Fk;
Fjpj;Jnk iffhYk; kplWk; gw;wpf;
Fj;jpna tpWtpbwd;nw jhdpUf;Fk;
ejpj;Jnk ehzw;g{g;nghyf; fpUkp tPGk;
ehWnk fpUkpfe;j jiynehf;fhnl”

- Frontal headache.
- Excessive salivation.
- Bodypain
- Throbbing pain in both limbs
- Worms comeout which look like naanal flower.

VI. SURIYAVARTHAM

“fe;jkhk; tyg;gf;f kplg;gf;f khjy;
fz;zpika[k; _f;foa[k; g[Utk; gw;wp
g[e;jkhk; g[Utj;jp Y]rp Fj;jy;
nghy; typf;F'; fz;jhDe; RU';fpf; fhZk;
ge;jkh Klk;bg';Fk; ghukhFk;
gfw;nghJ jhH;e;jt[l ndht[kl;lhk;
Je;jkhe; Je;Jkpnghy; typa[z;lhFk;
R{hpahth;j;jj;jpd; R%gkhnk”

- Unilateral pain the head.
- Stitching pain around the eye nasal bridge base, eyebrows.
- Myosis
- Lethargic.
- Pain starts with Sunrise and gradually subsides during Sunset.
- Pulsating pain.

VII. CHANDRAVARTHAM

“R%gkh a[lk;bg';Fk; typa[khfpj;
Jk;kpna _f;filj;Jr; Rfe;jkw;W
g[Utnk kpf typj;J bew;wpnahL
g[z;nghyf; File;jpl;Lg; g[sfkhfp
mUtkh ae;jpapd; nghJ njhd;wp
mh;j;j uhj;jphp kl;L kiyr; ryhfpr;
r%gkha; tpofpw neuj;jpy; jhDk;
rha;f;Fnk khre;jpuhth;j;jkhnk”

- Body pain
- Sneezing
- Nasal Congestion
- Anosmia
- Pain in the frontal region
- Pain agravates during night and relieved during day time

VIII. KARNAVARTHAM

“th;j;jkha; khh;nghL gplhp fhJ
typj;Jnk ahg;g[bfhz;l o[j;jhw;nghyf;
Fw;wkha;f; fhjpuz;Lk; Filr;ryhFk;
nfhzpna fGj;J'; fhJ'; fdf;Fk;
mw;wkh a[r;rpapY bew;wp jd;dpy;
mof;fof;F nehahfp arjpahFk;
gw;wkha;g; grpapd;wp cwf;fkpd;nwy;
ghu fh;dhth;j;jbkd;nw gfuyhnk”

- Pain in the chest, the occipital region and the ear.
- Shooting pain in the ears.
- Frontal and vertex pain.
- Loss of appetite
- Insomnia

IX. ORUTHALAI VATHAPETHAM

“gfuhd bthUjiyaha; ghjp behe;J
g[fHp bfhz;L bksyp jidg; gpse;jhw;nghy
epfuhd fz;QePh; ghae;J fhe;jp
beL_r;R tpl;Lnk epide;J Jd;gk;
jpfuhd rle;jhDe; jpLf;Fz;lhfpr;
rp Qf;fpUkyhfpna grp fhzhJ

tfuhd thjkha; kaph;f;Tr;rhFk;
thj ngjj;njhh; jiy typa[khnk”

- Pain felt on one side of the head.
- Tearing pain as if the head is split into two
- Excessive lacrimation
- Cough
- Anorexia
- Gooseflesh

MUKKUTRA IYAL

Vatha, Pitha, Kapham are the three humours which are the life constituents of the human body. They are formed by the different combination of five elements such as

Vatham = Vayu +Akayam

Pitham = Thee

Kapham = Mann + Neer

The right proportion of each is responsible for maintaining good health and when these three humours are disturbed, it manifests as the pathologic state of a body.

“kpfpD'; FiwapDk; neha; bra;a[k; E]nyhh;
tsp Kjyh vz;zpa _d;W”

In **‘Pitha Thalainokkaadu’** the deranged humour is Vatham.

According to **Theraiyar Vagadam**,

“jf;ftha[nfhgpj;jhy; re;Jt[ise;J jiynehthk;
kpf;f _hp bfhl;lhtp tpl;l bfhpa[ky';fl;Lk;
xf;feuk;g[jhd; Kl';Fk; cyh;e;J tha;eP%wptUk;
kpf;ff; FspUk; eLf;fKk; nkdpFd;wp tU';fhnd”

gf;fk; vz;. 16

According to **Angathipatham**

“fhw;WW] nfhgpj; jhy;tha; frg;gpy;yhJ ,dpg;g[va;Jk;
njhw;WW] g[j;jpke;j brhy;Yiu fhl;L'; fz;zhy;
njw;WW] tha;ik eP';Fk; rpunuhf nfhgKz;lhk;
Tw;WW] fhykhd FzKk; ew;FzKk; gz;ghk;”

m';fhjpghjk; gf;fk; vz; 65

I. ROLE OF VATHA DERANGEMENT IN “PITHA THALAINOKKADU”

According to Siddha pathology, “Noi Naadal Noi Mudhal Naadal”the following aetological factors are,

- Arusuvai Maarupaadu (Diet)
- Paruvakala Maarupaadu (Seasons)
- Vegangal Adakkal (Reflexes)

1. RELATION BETWEEN SUVAI, PANJABOOTHAM, MUKKUTRAM

	SUVAI	POOTHAM	KUTRA VIRUTHI ↑ OR SAMAPADUTHAL ↓
1.	Inippu (Sweet)	Mann+ Neer	Kapham ↑ Vatham, Pitham ↓
2.	Pulippu (Sour)	Mann + Thee	Kapham, Pitham ↑ Vatham ↓
3.	Uppu (Saline)	Thee + Neer	Kapham, Pitham ↑ Vatham ↓
4.	Kaippu (Bitter)	Vayu +Akayam	Vatham ↑ Kapham ↓ Pitham ↓
5.	Kaarppu (Pungent)	Vayu + Thee	Vatham, Pitham ↑ Kapham ↓
6.	Thuvarpu (Astringent)	Mann + Vayu	Vatham ↑ Kapham ↓ Pitham ↓

Bitter, astringent, pungent tastes of food are highly responsible for Vatha derangement.

2. PARUVAKAALA MAARUPAADU

Siddhars classified a year into six seasons with their own significance. What is in the Macrocosm is imbibed in the Microcosm. As the predominance of the elements in the environment -changes, it will impact the equilibrium of the doshas in our bodies.

Sl. No.	SEASONS & DURATION	DERANGED KUTRAM	SAMAPADUTHUM SUVAI

1.	Kaarkalam (Early rainy) Avani - Purataasi Aug 16 - Oct 15	Vatham ↑↑ Pitham ↑	Inippu Pulippu Uppu
2.	Koothir kalam (Late rainy) Iypasi - Karthigai Oct 16 – Dec 15	Vatham — Pitham ↑↑	Inippu Kaippu Thuvarpu
3.	Munpani Kalam (Early winter) Markazhi - Thai Dec 16 – Feb 15	Pitham —	Inippu Pulippu Uppu
4.	Pinpani Kalam (Late winter) Masi - Panguni Feb 16 – April 15	Kapham ↑	Inippu Pulippu Thuvarpu
5.	Elavenil Kalam (Early summer) Chithirai – Vaikasi April 16 – Jun 15	Kapham ↑↑	Kaippu Karppu Thuvarpu
6.	Mudhuvenil Kalam (Late summer) Aani – Aadi June 16 – Aug 15	Kapham — Vatham ↑	Inippu

↑ **Thannilai Valarchi** — **Thannilai Adaithal** ↑↑ **Vetrunilai Valarchi**

As the disease **'Pitha Thalainokkaadu'** occurs due to the derangement of Vatham, its incidence is expected more during the Kaarkalam & Muthuvenilkalam.

3. **VEGANGAL ADAKKAL**

Among 14 Vegangal, Malam (Faeces) Thummal (Sneezing) Vizhineer (Lacrimation), Thookam (Sleep) suppression related with Vatha derangement and **'Pitha Thalainokkaadu'**.

a) MALAM

- **"mwpe;jpLk; thjk; ml';Fk; kyj;jpdpy;"**
- **"kykij alf;fpdhny**

jiytyp kpft[z;lhFk;”

Abaana Vayu is responsible for defaecation and when it is suppressed, the equilibrium of the Vatha naadi, that is Idakalai + Abaanan = Vatham, concept is altered.

b) THUMMAL

“Jk;kiyj; jiljhd; bra;jhy;
bjhFj;jpLe; jiyneht[z;lhk;”

Kirukaran is responsible for sneezing and when it is suppressed it becomes hot and light and spreads upwards and causes head diseases.

c) VIZHINEER

“tpHpapdpy; ePulf;fpy;
mGfpLk; rpurpy; nuhfk;”

Koorman is responsible for lacrimation. And when it is suppressed it causes head diseases.

d) THOOKAM

Devadhathan is responsible for sleep. And when it is disturbed it causes heaviness of head.

“epj;jpiu ml';fpg; nghf
epj;jKk; jiyfdg;g[”

The above 3 aetiological factors derange the Vatham in the following aspects.

- In Natural properties.
- In the functioning of Dhasavayukkal.
- In the functioning of seven Udal Thathukkal.

I. Natural properties of Vatham :

- To stimulate, respirate, activate body, mind and intellect.
- To expel 14 kinds of natural reflexes.
- To activate 7 physical constituents.
- To strengthen 5 sensory organs.

Any derangement in Vatham, impairs the above normal properties and thus causes **“Pitha Thalainokkadu”.**

II. MUKKUTRA VERUPAADU IN PITHA THALAINOKKAADU

- **VATHAM**

1. PRAANAN (Uyirkaal)

The Praanan helps in the digestion of ingested food. It co-ordinates the five senses, the mind and the intellect and respiration.

Derangement causes rhinorrhoea, sneezing, cough, expectoration, excessive salivation and indigestion.

2. ABAANAN (Kezhnokunkaal)

It is responsible for excretion of urine and faeces. It helps to take the essence of the digested food to the different parts of the body.

Derangement causes constipation.

3. VYANAN (Paravukaal)

It activates voluntary and involuntary movements of the body and thus makes them to extend or contract. This appreciates the sense of touch, helps to take the essence of the food to the major parts of the body and guards it.

Derangement causes pain in the medial canthus of the eye and eyebrow region, throat and the ears, heaviness of head, headache etc.

4. UDHANAN (Melnokkungkaal)

It takes the essence of food and stores it at appropriate places. It helps in digestion and assimilation of food.

Derangement causes excessive salivation, throat pain and voice - changes.

5. SAMANAN (Nadukkaal)

This is responsible for the balance of the other four Vayukkal. It equalises the six tastes, water, food etc and helps in assimilation.

Derangement causes indigestion and loss of appetite.

6. NAAGAN

It is responsible for higher intellectual functions like hearing, thinking etc. It helps for closing and opening of the eyelids.

7. KOORMAN

It starts from the mind and causes winking of the eyelids, yawning and closure of mouth. It gives strength and helps to visualize things and for lacrimal secretion.

Derangement causes irritation and watering of eyes excessively.

8. KIRUKARAN

It induces hunger, makes one to concentrate on onething. It causes nasal and salivary secretions. sneezing and cough.

Derangement causes rhinorrhoea, sneezing, nasal congestion, excessive salivation, and cough.

9. DEVADHATHAN

Laziness is attributed to Devadhathan. Occular movements and human passions are attributed to this.

Derangement causes insomnia.

10. DHANANJAYAN

It is responsible for the bloating of the body after death and also for the foul smell.

- **PITHAM**

Pitham is responsible for digestion, vision, maintenance of body temperature, hunger, thirst etc. It is of 5 types depending upon the locations and the functions as follows.

1. ANAL PITHAM (Aakanal)

It causes digestion and dries up moist ingested substances.

Derangement produces indigestion.

2. RANJAGA PITHAM(Vanna Eripitham)

This fire lies in the stomach and gives red colour to the chyme and produces blood. It improves blood circulation.

Derangement causes anaemia.

3. SADHAKA PITHAM (Aatralanki Pitham)

This fire is responsible for movement and intellectual activity.

Derangement causes disability to do normal works.

4. PRASAKA PITHAM (Ulloli thee)

It gives colour and complexion to the skin.

5. ALOSAKA PITHAM (Nokkazhal Pitham)

It lies in the eyes and causes the faculty of vision. It helps to visualize things.

Derangement causes diminished vision.

- **KAPHAM**

Greasiness, strength, restricted joint movements, pallor, deep sleep, indigestion, sweet taste on tongue are the functions of Kapham.

FIVE TYPES OF KAPHAM

1. AVALAMBAGAM (Ali Iyyam)

It lies in the lungs and helps in respiration. This is vital among all types of kapham for it controls the other four kapham and maintains equilibrium.

Derangement causes cough with expectoration.

2. KILETHAGAM (Neerpi Iyyam)

It lies in the stomach. Mixes the consumed food and water and promotes the digestive process.

Derangement causes indigestion.

3. POTHAGAM (Suvaikaan Iyyam)

It lies in the tongue and helps to realize the taste of the consuming food.

Derangement causes loss of taste.

4. THARPAGAM (Niraivu Iyyam)

Sustaining the head, it gives refrigerant effect to cool the eyes.

5. SANTHIGAM (Onri iyyam)

Sustaining the joints & make them move freely and easily.

Derangement causes pain in joints.

III. EZHU UDAL KATTUGAL (Seven physical constituents)

The human body is made of seven basic physical constituents. They should be in normal condition. Any variation in them will lead to their functional deviations. They are :

1. Saaram (Chyle)

This gives mental and physical perseverance.

Derangement causes fatigue, loss of appetite.

2. Senneer (Blood)

Imparts colour to the body, it nourishes the body and is responsible for the ability and the intellect of an individual.

Derangement causes weakness, anaemia.

3. Oon (Muscle)

It gives shape to the body according to the physical activities and covers the bones.

Derangement causes pain in joints

4. Kozhuppu (Adipose tissue)

It lubricates the joints and other parts of the body to function smoothly.

5. Enbu (Bone)

Supports the frame and is responsible for the postures and movements of the body.

Derangement causes deviated nasal septum.

6. Majjai (Bone marrow)

It occupies the medulla of the bones and gives strength and softness to them.

7. Suronitham (Ovum) / Vindhu (Sperm)

It is responsible for reproduction.

PINIYARI MURAIMAI (Diagnosis)

Siddha System has the unique diagnostic methods to identify the diseases and their causes.

“gypg;gjw;F tpahjpa[s;nshh; njff; TWk;
gUj;jt[ly; bkype;jt[ly; nehapd; TWk;
rypg;gpy;yh kyf;TWk; ryj;jpd; TWk;
rhj;jpak; mrhj;jpaKk; jj;Jtf; TWk;
typg;gpyh jhJ epj;jpiuapd; TWk;
k';ifah;fs; Mirapd; nky; kaf;ff;TWk;
gypg;gpyh fd;kjd;k ehl;lf;TWk;
ghh;j;jwpe;j gpwFghh; kUe;jpd; Tnw”
rpj;j kUj;Jth';fr; RUf;fk; gf;fk; 191

According to the constitution of a body, the types of disease, the examination of stools and urine, whether it is curable or not, sleeping nature of the patient, sexual indulgence and karma should be analyzed and then only treatment should be given to the patient. The diagnosis is made by observing,

- Poriyaal Therthal
- Pulanaal Arithal
- Vinauthal
- Envagai Thervugal

1. PORIYAAL THERTHAL

Pori means the organs of perception. The author should examine the five sensory organs – Mei, Vaai, Kan, Mooku, Sevi. In **“Pitha Thalainokkaadu”** pain in the paranasal region, headache, heaviness of head can be observed from Mei, throat pain,voice-changes, excessive salivation, expectoration from Vaai,irritation and watering of eyes from Kan, rhinorrhoea, sneezing, nasal congestion, nasal irritation from Mooku, ear pain from Sevi can be observed.

2. PULANAAL ARITHAL

The author should examine the patient’s pulangal. Pulan means the object of senses.

- Manam - perception of smell
- Suvai - perception of taste
- Oli - perception of vision

- ❖ Ooru - perception of sensation
- ❖ Osai - perception of sound.

In **"Pitha Thalainokkaadu"** disturbance of smell from mooku,diminished vision from kan**,** pain and tenderness in the paranasal region, throat and ear pain, fever from mei can be observed.

3. VINAUTHAL

It is the process of obtaining the detailed history of the disease by interrogating the patient for the particular details- the patient's name, age, native place, occupation, address, religion, diet, personal habits, chief complaints, past illness, family history etc. For example,

A. THINAI (the five fold geographical divisions)

In the Siddha System, the history regarding the patient's native place has specific significance.

S.No.	LAND	AILMENTS
1.	Kurunji (Mountain region)	Kapha Noigal
2.	Mullai (Forest region)	Pitha Noigal Vatha Noigal
3.	Marutham (Fertile region)	No Diseases
4.	Neithal (Coastal region)	Vatha Noigal
5.	Paalai (Desert region)	Vatha, Pitha, Kapha Noigal

As "**Pitha Thalainokkaadu"** is caused primarily by the derangement of Vatham its occurrence is expected to be more in the Neithal and Mullai Thinai.

B. EIGHT DIAGNOSTIC METHODS OF SIDDHA:

(Envagai Thervugal)

"eho ghprk; ehepwk;bkhHp tpHp
kyk; _j;jpukpit kUj;Jtuha[jk;"

neha; ehly; I- gf;fk; 253

"bka;Fwp epwk;bjhdp tpHpeh ,Ukyk; iff;Fwp"

rpj;j kUj;Jth';fr; RUf;fk; gf;fk; 197

Siddhars have developed a unique method of diagnosing the disease by ‘Envagai Thervugal’. They are

- **NAADI**
- **SPARISAM**
- **NAA**
- **NIRAM**
- **MOZHI**
- **VIZHI**
- **MALAM**
- **MOOTHIRAM**

1. **NAADI (Pulse)** - “**clypy; caph; jhpg;gjw;F fhuzkhd rf;jp vJnth mJnt jhJ (m) eho vdg;gLk;.**

“ fhpKfdoia thH;j;jp ifjdpy; ehoghh;f;fpy;
bgUtpuy';Fyj;jpy; gpoj;jo eLnt bjhl;lhy;
xUtpunyhoy; thjKah; eLtpuypw; gpj;jk;
jpUtpuy; _d;wpnyhoy; nrj;Jk ehojhnd”
neha; ehly;-I gf;fk; 86

Naadi is the seat anchor of energy. It is the binding force between soul and body. The Naadi is felt as Vatha, Pitha, Kapham respectively with the tips of index, middle and ring fingers over the lower end of the radius. The ratio between Vatha, Pitha, Kapham is 1:1/2:1/4 respectively. Derangement of this ratio indicates a specific pathological manifestation.

NAADI NADAI in “PITHA THALAINOKKAADU”

1. In Guru Naadi 235

“ rpnuh nuhfkhdhYk; thjgpj;j";
brwp epw;Fk; ehoaJ rPwpj;jhnd” gf;fk; 37

2. In Kaikanda Anuboga Vaidhya Perungural

“ctg;g[gpj;jpdpy; thjnkhoy; cUFk; gPer gt[j;jpuK';
Ftpa kz;ilf;Fj; jiuahg;g[bfhLtyp _ybkd;Wk;
TwpLk; ikaj;jpuz;odpy; bfhz;lhL gFnknahoy;
kPwpLk; rd;dptpfhuKs; fhl;Lnk bkj;bjdJ jiyaJ nehFk;”
gf;fk; 4

3. In Sadhaga Naadi

“fz;lhnah rpnyw;gdj;jpy; thjeho
fye;jpLfpy; tapWbghUky; …….
jpz;lhL ehrpfh gPl';ff;fy;
rpuneha;fs; gyt[k; te;J rpf;Fe;jhnd”
neha; ehly; I gf;fk; 175

4. In Agathiyar Naadi

“thjj;jpy; nrj;Jkkhfpy; typbahL tPf;fKz;lhk;
ngjpj;Jj; jiyapoj;Jg; gpz';fpa Fz';fs; ntwha;
jPJw;W bka;btSj;Jj; jplKldrd"; bry;yh
ngjpj;J eht[ngRk; bgUfnt tPf;fKz;lhk;”
neha; ehly;; I gf;fk; 173

5. In Angathipatham

“ez;Qfpd;w thjkpuz;blhd;W gpj;j
eykhfj; bjhe;jpj;jhw; jiyfdj;Jj;
jpz;zkjh clk;bg';Fk; Fj;jp nehth";
brkpahky; tapW]jpg; bghUkpf; bfhs;Sk;
fz;zjdpw; WapYz;lha;j; jiyePh; bfhz;L
fhy;if bghUj;Jfs; kpft[KiHt[z;lhfp
xz;Qjyhh; nghfj;jpy; tpUg;gkhF
Kz;ikapJ btdthuha;j; JWjpfhnz”
gf;fk; 33

6. In Agasthiyar 1200

“ghhpj;j nrj;Jkkpuz;L ghpe;bjhU thjnkhow;
Thpj;J Fsph;e;J TR';Fk;gpa['; FzK';bfl;L
neuj;j ePUKz;lha; beyp; j;jiyj; jpnufneht[";
rPuw;w nrj;Jkthje; bjhe;jpg; ghe;jpU ey;khnj”
gf;fk;

39

2. Sparisam (Palpation)

By sparisam temperature of the body, skin changes, ulcer, swellings, abnormal growth, tenderness etc can be noticed. In **“Pitha Thalainokkaadu”** patient’s temperature may alter, tenderness may be present in the cheek, eyebrow and around the orbit region.

3. Naa (Tongue)

Colour, coating, dryness, movement of the tongue etc can be noticed. In **"Pitha Thalainokkaadu"** patients, if anaemia is present they will have pallor tongue. If constipation is present they have coated tongue.

4. Niram (Colour)

Colour of the skin all over the body should be observed. In **"Pitha Thalainokkaadu"** on local examination nasal mucosa would seem to be reddened.

5. Mozhi (speech)

Character of speech is noted. In **"Pitha Thalainokkaadu"** voice - changes may be noticed.

6. Vizhi (Eye)

Colour, vision etc are noted. In **"Pitha Thalainkkaadu"** patients, watering of eyes may be present .

7. Malam (Stool)

Quantity, colour, consistency observed. In **"Pitha Thalainokkaadu"** patients constipation seems to be present.

8. Siruneer (Urine)

In urine analysis the colour, odour, presence of froth, deposits, specific gravity have to be noted.

- **Neerkuri** – "**te;jePh;f;fhp vil kzk; Eiu v";rbyd;**
  iwe;jpaYstit aiwFJ Kiwna"

  neha; ehly; I. gf;fk; **265**

- **Neikuri**

  "fy;tp rhj;jpu';fs; fw;w fdjt Kdptuha;e;J
  brhy;Yj;jpug; ghPl;ir brhw;wpl ,dpJ nfz;kpd;
  my;ypilr; rhkbkhd;W brd;w jd; mg;ghy; ePiu
  ey;y gP';fhdpy; th';fp ey;byz;bza; tpl;Lg;ghnu"

  m';fhjpghjk; gf;fk; 115

Method

On the day before the urine test, one should take the food, consisting of all the six tastes at the regular time based on one's digestive fire. After a sound sleep, urine is collected in a glass vessel and the test should be done within 90 minutes. Keep the vessel in the Sun lighted area and drop a drop of gingelly oil in the urine.

According to the spread of oil will give an idea about the derangement of Kutram which helps to diagnose the disease, severity and prognosis.

(neha; ehly;; I gf;fk; 279)

1. "mubtd ePz;od~nj thjk;"

If the oil drop takes the shape of a snake, it indicates Vatha disease.

2. "MHpnghy; gutpd; m~nj gpj;jk;"

If it spreads like a ring it indicates Pitham.

2. "Kj;bjhj;J epw;fpd; bkhHptjd; fgnk"

If it stands like a pearl it indicates Kapha disease.

Saathiya Asaathiyangal (Prognosis)

"Pitha Thalainokkaadu" is a curable disease. But recurrence may also come in exceptional cases.

MARUTHUVAM (Line of treatment)

"cw;whdst[k; gpzpast[';fhyKk;
fw;whd; fUjpr; bray;" Fws; vz; 949

The treatment should be based on the age and body built of the patient, the severity of the disease and the duration of the ailment. In Siddha, treatment is not only for the cure of disease, but also for the prevention and improving the general condition of the body after treatment. This is said as.

- **Kaappu** (Prevention)
- **Neekam** (Treatment)
- **Niraivu** (Restoration of Well Being)

(i) KAAPPU (Prevention)

"tUKd;dh; fhthjhd; thH;f;if
vhp Kd;dh; itj;J]W nghyf;bfLk;" Fws; vz; 435

"Prevention Is Better Than Cure".

One who follows a balanced regular diet, good habits and environmental adaptation, leads a better, healthy long life. The author can also give the knowledge of 'Pini anugaa Vidhi Muraigal' to patients for their healthy life.

(ii) NEEKAM (Treatment)

The aim of the treatment is

- To bring the affected Thathus to normal level
- To treat the disease with internal & external medicines
- Pathiyam

"_d;wpbyhd;W ah;e;jij Kd;duwpe;J
Ke;jpajid bahHpj;jpL kUe;jpL
jzpa[k; nehapd; je;jpukpJnt
ngzpf; fzpj;jpod; gpwtha;gpd; Fzk;"
neha; ehly; I **gf;fk; 232**

"tpnurdj;jhy; thjk; jhGk;" neha; ehly; I **gf;fk; 238**

Vatha diseases can be brought down by Viresanam. So, after purgation, the trial medicines are given to treat "**Pitha Thalainokkaadu"** patients for 48 days.

They are :

I. Internal medicine :

Peenisa Choornam - 1gm with honey twice a day

II. External medicines :

1. Kungumapoo Nasiyum - 2 drops instilled in both nostrils twice daily.
2. Vettiver thylum - 30ml given for headbath to be taken twice a week

So, proper medicine, diet, yoga, pranayama are advised for a healthy living and to restore equilibrium of Kutram in a diseased condition.

Pathiyam

"mUe;J nthUlywpe;J gj;jpae;jid tFg;gha;"
rpj;jkUj;Jth';fr; RUf;fk; gf;fk; 160

During the treatment of **"Pitha Thalainokkaadu"** the patients are advised to take Vatha pacifying diet.

VATHA PACIFYING DIET

“br';fG ePh;nfh\;le; njd;kpsF ey;byz;bza;
j';FbgU';fhae; jGjhiH – v';bf';Fk;
Tl;LrpW Kj;Jbea; nfhjpy; cGe;jpitfs;
thl;L kdpyj;ij kjp”
rpj;jkUj;Jth';fr; RUf;fk; gf;fk; 164

“thj nkyPl;lhy; kJuk; g[spa[g;g[
nrjKwr; bra;a["; rpiwak; -Xjf;nfs;
fhue; Jth;frg;g[f; fhl;L"; Ritbay;yhk;
rhug; ghpfhu"; rhw;W”
neha; ehly; I **gf;fk; 22**

“fha;e;jeP Uz;Q';fhy; fz;brtpneha; R{iyFd;ke;
njha;e;jRu ntfe; bjhliuak; - gha;e;jlUk;
thjj;jpd; nfhgkpit khWbkd yhjpaUs;
ntjj;jpd; thf;fpakhk; tps;”
rpj;jkUj;Jth';fr; RUf;fk; gf;fk; 147

ADVICE

- Patient is advised to live in the fresh air environment.
- Avoid inhalation of dust, smoke, aromatic, toxic fumes.
- Avoid artificially flavoured, artificially coloured food items & soft drinks and have a balanced diet.
- Avoid smoking.
- Avoid daytime sleep.
- Avoid the suppression of 14 normal body reflexes.
- Have a sound sleep for 6 to 8 hours per day in night time.
- Practice of Rechaka, Puraka & Bhastrika Pranayama & Shava Asana.

NIRAIVU (Restoration)

- Assurance of recovery from disease should be given to all patients.
- Nutritive food and supportive therapy increase the immunity levels.
- All the patients are advised to follow moral principles in life.

*** * ***

Modern Aspect

MODERN ASPECT
ANATOMY AND PHYSIOLOGY OF NOSE & PARANASAL SINUSES

ANATOMY OF THE NOSE

The anatomy of the nose can be conveniently studied by dividing it into the external nose and the nasal cavity.

THE EXTERNAL NOSE

It is triangular with a wide base that contains two external openings, the nares (or) nostrils, separated by the columella. Inside the aperture of each nostril is a dilated area covered by skin known as the vestibule. It is supported by bone and cartilage. The bony part is formed mainly by the nasal bones on each side and the frontal process of the maxillary bone. The Cartilaginous portion is formed by several cartilages which support and give shape to the lower part of the nose and nasal tips.

THE NASAL CAVITY

It is an irregular space between buccal roof and cranial base which is divided by a median septum into two nasal fossae. Nasal cavity extends from the anterior nares to the choanae posteriorly where it becomes continuous with the nasopharynx.

BOUNDARIES OF THE NASAL CAVITY

Each cavity is divided into 4 parts. Superior (roof) wall is formed anteriorly by the cribriform plate of the ethmoid bone. The posterior portion of the roof is formed by the body of the sphenoid bone. Inferiorly (floor) the nasal cavity is formed by the maxilla and the palatine bones.

THE NASAL SEPTUM:-

It is a structure composed partly of cartilage and partly of bone. Anteriorly the septum is formed by the quadrilateral cartilage. Posteriorly the perpendicular plate of the ethmoid while behind that the rostrum of the sphenoid bone helps to form the partition. Below the quadrilateral cartilage articulates with the maxillary spine and with the vomer.The septum is covered with perichondrium where there is cartilage and with periosteum where there is bone and superficially with mucous membrane.

On the lateral wall there is a system of ridges known as the turbinates, each of which overhangs a groove known as a meatus. There are three turbinates inferior, middle and superior which are formed by the nasal portion of the maxillary bone, the perpendicular plate of palatine bone and the ethmoidal labrynth.

BLOOD SUPPLY :

1. External Carotid system
    1. Sphenopalatine branch
    2. Great palatine branch

    } Of Maxillary artery
2. Internal Carotid system
    1. Anterior ethmoidal artery
    2. Posterior ethmoidal artery

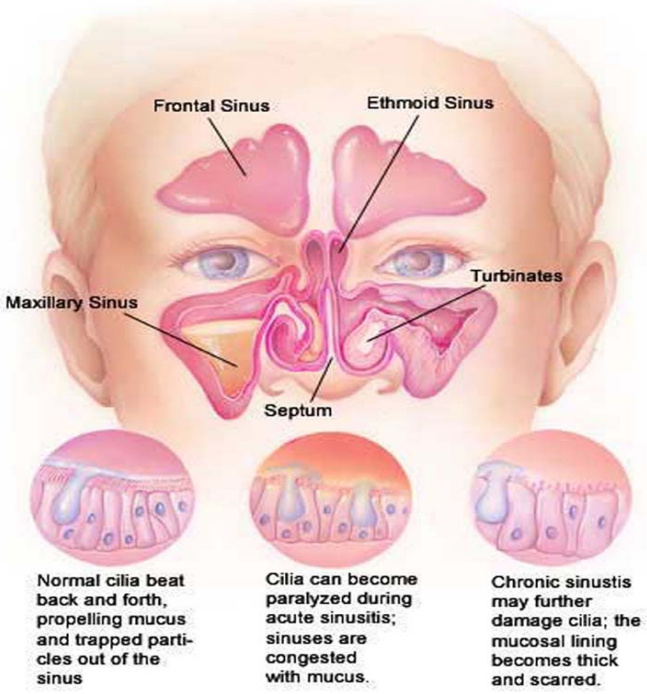
Littles' area is the area in the antero-inferior part of the nasal septum 5mm behind the muco cutaneous junction where the internal and external carotid system of arteries anastamose forming a vascular plexus called "Kiesselback's plexus.

LYMPHATIC DRAINAGE: Superior deep cervical group

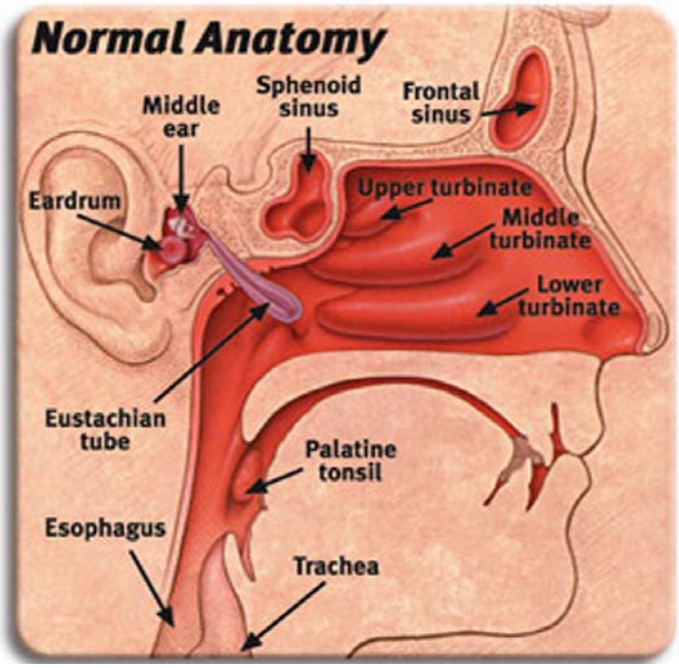
NERVE SUPPLY :

1. General sensory nerve supply-branches of sphenopalatine ganglion, anterior ethmoidal nerve, branches from infra orbital nerve.
2. Olfactory nerves carries the sense of smell to the brain.
3. Autonomic nerves also innervate the nose.

ANATOMY OF THE PARANASAL SINUSES



RELATED TO THE EAR AND THROAT



THE PARANASAL SINUSES

The Paranasal sinuses are a group of air containing spaces in the skull surrounding the nose. Clinically, they have been divided into 2 groups. They are four on each side.

1. Anterior group	-	Maxillary,frontal,anterior ethmoidal sinuses. They all open in the middle meatus.
2. Posterior group	-	Posterior ethmoidal sinuses which open in the superior meatus.Sphenoid sinus which opens in sphenoethmoidal recess.

1. MAXILLARY SINUS(Antrum of Highmore)

It is the largest paranasal sinus. It is the first paranasal sinus to develop during the third month of gestation buds from the infundibulum between the bulla ethmoidalis and the uncinate process.The boundaries of the maxillary sinus are the nasal cavity medially, the zygoma and infra temporal fossa laterally, the floor of the orbit superiorly and the hard palate and alveolar process of the maxilla inferiorly. Its volume is 15-30ml.

2. ETHMOIDAL SINUS

Together with the maxillary sinuses, the ethmoids are the only sinuses developed enough at birth to cause clinically relevant sinusitis in infancy and early childhood. The bone of the ethmoid is the thinnest of the paranasal sinus. The boundaries of the ethmoid sinus are the nasal cavity, cribriform plate and olfactory bulb medially, the medial wall of the orbit laterally, the floor of the anterior cranial fossa superiorly and the ostiomeatal complex inferiorly.

3.SPHENOID SINUS

The next to develop is the sphenoid sinus seen as early as the fourth month of gestation. The boundaries are intersinus septum medially, the cavernous sinus laterally, the chiasmatic groove superiorly, the hypophyseal fossa posteriorly and nasopharynx inferiorly. The volume is 7.5ml.

4.FRONTAL SINUS

It doesn't begin to aerate the frontal bone until about age of 4 or 5 years and continues to grow until the late teens. The boundaries of the frontal sinus are the orbit and ethmoid sinus inferiorly and the frontal lobe superiorly and posteriorly. Its shape and size vary from person to person. Its average volume is 6-7ml.

MUCOSAL ANATOMY

Para nasal sinuses are lined by mucous membrane which is continuous with that of the nasal cavity through the ostia of sinuses. Histologically, it is lined by the ciliated pseudostratified respiratory type of epithelium. It is thinner and less vascular compared to that of the nasal cavity. Healthy mucosa is fairly uniform in thickness (0.3–0.8mm) within all sinus cavities. The epithelium contains a variable number of goblet cells which produce components of the nasal mucus. The lamina propria is a thin, fibrous layer that forms the basement membrane of the epithelial layer of the mucosa. Seromucinous glands are found in submucosa and are important in mucus production. The mucosa of the inferior turbinates is especially unique in that it contains abundant small veins having a relatively thick muscular layer. The high volume of these veins imparts an erectile property to this mucosa.

CILIARY ANATOMY

The cilia of the respiratory epithelium of the nose and sinuses emerge from the luminal surface of the normal healthy columnar epithelial cell. Each nasal cell has 200-300 cilia. The ciliary structure consists of a long axoneme, with a 9+2 pattern of microtubule doublets, connected to the central sheath by radial spokes. Extending from outer doublet is a dynein arm that contains adenosine triphosphate activity supplying energy to create ciliary motion.

PHYSIOLOGY OF THE NOSE

1. OLFACTION

The perception of smell is called olfaction. The olfactory area is situated high up in the nose and lined by olfactory epithelium is responsible for carrying smell sensation.

2. PASSAGE FOR RESPIRATION

The nose acts as the conduit for the passage of inspired and expired air. The path of the air column in the nose during inspiration is upwards and backwards towards the middle turbinate, then in a curve towards the posterior nares. The turbinates act as valve mechanism in determining the direction of air stream. Nasal airflow is also controlled by the nasal cycle. Nasal cycle is a rhythmic cyclical congestion and decongestion of the mucosa of the nasal cavities. These cyclical changes take place every 3-4 hours and is constant in every person.

3. FILTRATION OF INSPIRED AIR

The inspired air is filtered by the nose at the entrance of the nostril and by the mucous blanket of the nasal chambers. Finer particles like dust, bacteria and pollen are cleared by the mucous blanket. The nose is able to remove particles of size 30µ or more from inspired air.

4. AIR CONDITIONING OF INSPIRED AIR

The nose conditions the inspired air by 2 vital mechanisms warming and humidification.

1. Warming (or) Temperature regulation

The nose acts as a complex heat exchange system where two media – air and blood are in thermal contact. The high density of blood vessels may be a primary factor in one’s ability to warm inspired air.

2. Humidification

Climatic conditions influence the humidity of atmospheric air and the nose accordingly adjusts the humidity of the inspired air by the evaporation of moisture from the nasal mucosa. The total capacity for the nose to humidify air was estimated to require 456g of H_2O for 24 hours of breathing. Humidification is important as ciliary function ceases when relative humidity drops to around 50%

5. PROTECTION OF THE LOWER AIRWAY

This is achieved by mucociliary mechanism. The inhaled bacteria, virus, dust particle, pollen are all entangled in the mucous blanket and propelled to the pharynx. Presence of IgA, IgE, lysozymes etc.in the nasal secretions confers some immunological protection to the nasal mucosa. A constant nasal PH of 7 is optimum for the function of lysozymes and cilia.

6.VOCAL RESONANCE

The primary voice generated by the voice box is modulated and resonated by the nose and paranasal sinuses

7. NASAL REFLEXES

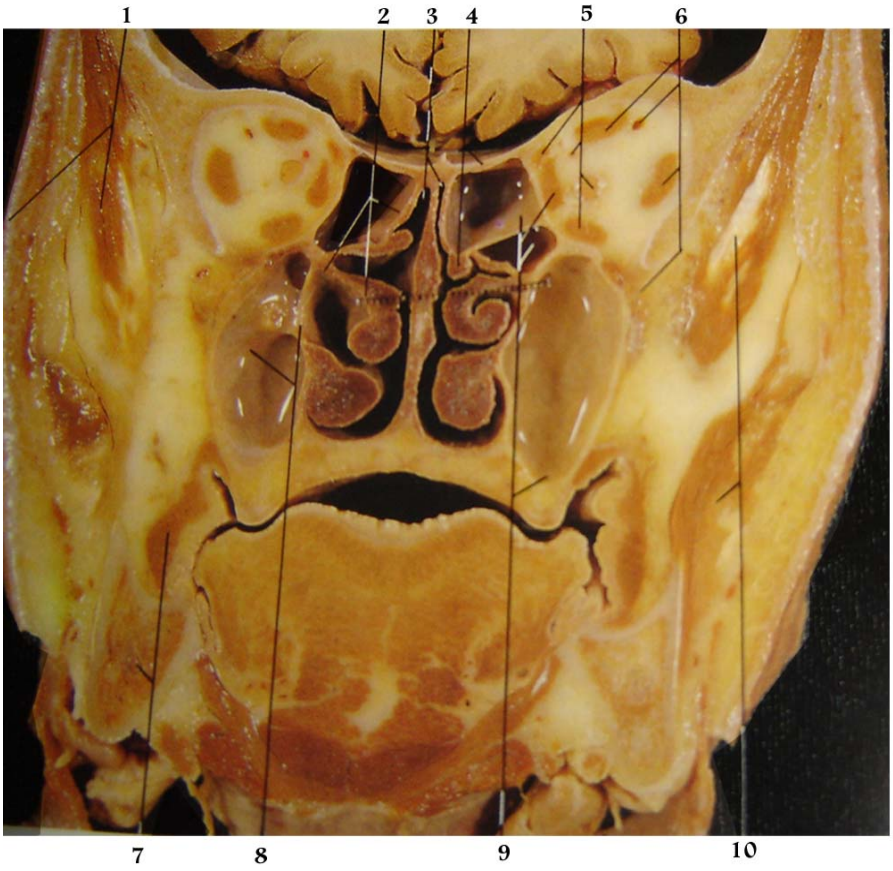
Reflexes mediated by nose are,

1. Nasogastric Reflex	:	Reflex secretion of saliva and gastric juice in response to aroma of food.
2. Sneezing	:	a protective reflex initiated by chemical, physical or thermal stimuli to the nose. It is associated with facial movements, nasal secretion, lacrimation along with closure of the larynx.

8. DRAINAGE OF TEARS

The nasolacrimal duct drains the lacrimal apparatus of the orbit into the inferior meatus and serve as a conduit for passage for tears. The nasal mucus is integral to the functions of the nose.

FRONTAL SECTION THROUGH THE HEAD IN THE POSTERIOR THIRD OF THE ORBIT



1. Skin & temporalis muscle
2. Middle nasal concha
3. Domes of the nasal cavity
4. Sphenoidal plane
5. Superior oblique muscle, optic nerve
6. Superior oblique muscle, ophthalmic vein
7. Buccinator muscle
8. Posterior wall of the maxillary sinus
9. Ethmoidal cells medial rectus muscle & deep floor of the maxillary sinus
10. Tendon of temporalis muscle, masseter muscle

PHYSIOLOGY OF THE PARANASAL SINUSES

1. VENTILATION OF THE SINUSES

The ostia are the channels through which the sinuses are ventilated. The sinuses are filled with air during expiration and empty during inspiration. The positive pressure created in the nose during expiration sets up eddies that ventilate the sinuses. The ventilation of sinuses is thus paradoxical.

2. DRAINAGE OF THE SINUSES

Each sinus has a definite drainage pattern, directed by the mucociliary flow. The mucous of the maxillary sinus drains in a spiral pattern towards the ostium. The frontal and sphenoid sinuses have downward gravity dependent drainage. The mucous from the sinuses from two main streams en-route to the nasopharynx to be finally moved down by gravity and swallowed. The first stream carries secretion from the frontal, maxillary and anterior ethmoidal cells and descends antero-inferior to the Eustachian tube orifice. The second stream carries secretion from the posterior ethmoidal cells and sphenoid sinuses and descends postero-superior to the Eustachian tube orifice. The Eustachian tube orifice thus acts as a barrier between two secretion pathways. Ostium size below 2.5mm is thought to be predisposed to disease.

FUNCTIONS OF THE PARANASAL SINUSES

1. Vocal Resonance
2. Air conditioning
3. Reduction of the weight of the skull
4. Provide mechanical rigidity to the facial skeleton
5. Thermal insulation of orbital and intra cranial structures

MUCOCILIARY TRANSPORT

The cilia on the surface of the epithelium beat constantly to move the mucous blanket on a specific path. This activity is referred to as mucociliary clearance and is essential for normal health of the nose and the sinuses. The cilia move the mucus out of the sinuses to prevent stasis of the mucus in the sinuses. All the toxic and infectious material trapped in the mucus is moved out of the sinuses and nose. All of the functions of the nose and sinuses depend on adequate ciliary function for normal and healthy operation. Cilia beat between 10-15 times per second in a normal environment of 32^{o} -37 ^{o}C. Many factors affect efficient ciliary motion

.

PRODUCTION OF MUCUS

Mucus forms from goblet cells with some contribution from submucous glands, transudation, serous cells, and simple ion transport. It has been estimated that the volume of nasal mucus secretions ranges from 600-700ml per day. Nasal mucus is composed of 95% water, 3% mucin, 2% other particles which include immunoglobulins, albumin, lysozyme etc. The mixture of ingredients in mucus changes are based on the condition of the nose, the general health of the person and other local pathological problems.

Nasal and sinus mucus normally exists in two layers on the surface of the epithelium. The deeper layer is less viscous and thinner than the outer layer. The inner layer is in direct contact with the cilia and allows the cilia to beat with less resistance. The thicker, more inhaled particles and contains a greater density of inflammatory mediators and leukocytes to increase protection against foreign substances and infectious agents. The movement of cilia is dependent on the visco-elasticity of the mucus.

SINUSITIS

Sinusitis is an inflammation of the paranasal sinuses.

CLASSIFICATION :

By Location :

a. Maxillary Sinusitis
b. Frontal Sinusitis
c. Ethmoid Sinusitis
d. Sphenoid Sinusitis

By Duration :

a. Acute Sinusitis < 3 Weeks
b. Chronic Sinusitis > 3 Months

ACUTE SINUSITIS

Acute inflammation of sinus mucosa is called acute sinusitis. The sinus most commonly involved is the maxillary, followed in turn by frontal,ethmoidal and sphenoidal. Very often, more than one sinus is infected and it is called as multisinusitis. Sometimes all the sinuses of one or both sides are involved simultaneously and it is called as pansinusitis.

AETIOLOGY OF SINUSITIS IN GENERAL :

A. **EXCITING CAUSES:**

1. NASAL INFECTIONS :

Sinus mucosa is a continuation of nasal mucosa and infections from nose can travel directly by continuity or by way of submucosal lymphatics. Most common cause of acute sinusitis is viral rhinitis followed by bacterial invasion.

2. DENTAL INFECTION :

This applies to maxillary sinus. Infection from the molar or premolar teeth or their extraction may be followed by acute sinusitis.

3. TRAUMA :

Compound fractures or penetrating injuries of sinuses may permit direct infection of sinus mucosa. Similarly, barotrauma may be followed by infection.

4. SWIMMING AND DIVING :

Infected water can enter the sinuses through their ostia. High content of chlorine gas in swimming pools can also set up chemical inflammation.

B. PREDISPOSING CAUSES :

LOCAL :

1. OBSTRUCTION TO SINUS VENTILATION AND DRAINAGE :

Any factors which interfere with ventilation and drainage function can cause sinusitis due to stasis of secretions in the sinus.

They are :

1. Deviated nasal septum
2. Hypertrophic turbinates
3. Nasal Polyp
4. Oedema of sinus ostia due to allergy or vasomotor rhinitis
5. Structural abnormality of ethmoid air cells
6. Benign or malignant neoplasm

2. STASIS OF SECRETIONS IN THE NASAL CAVITY

Normal secretions of nose may not drain into the nasopharynx because of their viscosity (Cystic Fibrosis) or obstruction (Enlarged Adenoids, Choanal atresia) and get infected.

3. PREVIOUS ATTACKS OF SINUSITIS :

Local defences of sinus mucosa are already damaged

GENERAL

ENVIRONMENTAL INFLUENCE ON SINUSITIS:

1. Outdoor and indoor pollution-(e.g)O_2,SO_2,NO_2,Volatile Organic Compounds,Formaldehyde
2. Cigarette smoking,passive smoking
3. Cold and wet climate
4. Over crowding and dust

Pollution causes sinonasal responses like nasal irritation, nasal inflammation, epithelialchanges, nasal host defense effects and nasal airflow resistance changes.

POOR GENERAL HEALTH :

Recent attack of exanthematous fever (measles, chickenpox, whooping cough), nutritional deficiencies & systemic disorders (diabetes, immune deficiency syndromes)

CAUSATIVE ORGANISMS :

VIROLOGY : Most cases of acute sinusitis start as viral infections followed soon by bacterial invasion. Rhino virus, Para Influenza virus, Influenza virus has been isolated from 16% of sinus aspirates from patients with acute community acquired sinusitis.

BACTERIOLOGY :

The bacteria most often responsible for acute sinusitis are,

1. Streptococcus Pneumoniae
2. Haemophillus Influenzae
3. Moraxella Catarrhalis
4. Streptococcus pyogenes
5. Staphylococcus aureus

Nosocomial sinusitis involves more gram negative such as Pseudomonas Aeruginosa, Klebsiella Pneumoniae, Escherichia Coli etc. Moraxella catarrhalis predominates in children.

FUNGAL SINUSITIS :

1. Mycetoma :

It is caused by aspergillus fumigatus and characterized by the formation of a fungal ball inside the sinus with a clay like appearance studded with sporangia. It generally affects one maxillary sinus.

2. Allergic fungal Sinusitis

It is caused by aspergillus, bipolaris, alternaria and curvularia species.It occurs mostly in atopic or asthmatic individuals. Loss of smell and nasal obstruction are the major symptoms.

3. Acute fulminant fungal sinusitis :

Fortunately rare. It's seen in immunocompromised patients- Diabetes, AIDS, Cancer, etc., caused by aspergillus, rhizopus etc.

4.Chronic invasive fungal sinusitis

Causative organisms aspergillus and dermataceous fungi in immunocompromised patients.

PATHOLOGY :

All features of acute inflammation of the sinuses can be seen at various stages. The changes are generally reversible. Resolution occurs within fifteen days.

Acute Sinusitis may be following types :

1. Acute Catarrhal Sinusitis
2. Acute Suppurative Sinusits
3. Acute Polypoidal Sinusitis

Virulence of the organism and host defences also influence the course of disease.

FACTORS IN THE PATHOLOGY OF SINUSITIS

1. OSTIAL PATENCY AND METABOLISM

The ostia of the PNS are the main keys to the pathology of sinuses. O_2 pressure within the maxillary sinis is dependent on the functional ostial diameter; when this is less than 2mm, O_2 pressure falls. A reduction of the ostial patency leads to aberrations in PO_2 and PCO_2 pressures resulting in an early inflammatory reaction. The PO_2 and PCO_2 pressures in retained sinus secretion during inflammation are highly dependent on the degree of purulence. The degree of inflammation will thus influence both the degree of tissue damage and ostial dysfunction. The CO_2 rises from the bicarbonate buffer system as the stronger lactic acid is continuously released in large amounts from invading leukocytes. These changes in substrate availability and redox potential may be favourable for bacterial growth.

2. MUCOSAL PATHOLOGY

Epithelial shedding, denudation, and restitution takes place during the early stages of both serous and purulent sinusitis. These lesions may add to the cycle of functional impairment during sinusitis. Bacteria are not normally present within the epithelium or sinus mucosa. During sinusitis unless the epithelial lining is disrupted. Certain bacteria such as Haemophillus influenza may penetrate the epithelium by specific mechanisms thus evading local immune response.

Glandular hyperplasia and goblet cell differentiation during sinusitis together with the formation of cysts and atypical glands may impair the mucociliary transport function in different respects and add to the development of mucosal pathology. Mucosa of the middle meatus and ostial region is more prone to influence ostial patency, because it may be more reactive to edema and the development of specific mucosal pathology.

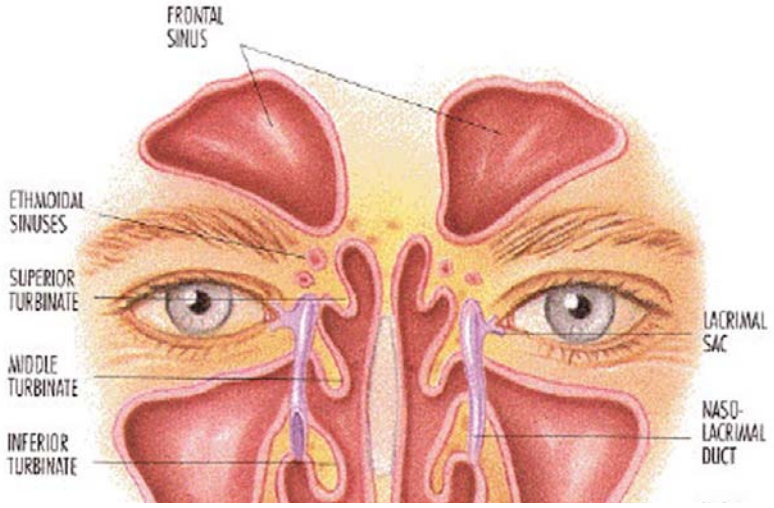
Local mucosal and polypoid pathologies in sinusitis develop within days as a consequence of reduced ventilation and subsequent development of local inflammation and possibly infection. Secretion within the sinus cavities appears to resolve rather rapidly together with symptoms, while mucosal changes persist for longer periods and usually take months to resolve.

2. LOCAL DEFENSE AND MUCOCILIARY CLEARANCE

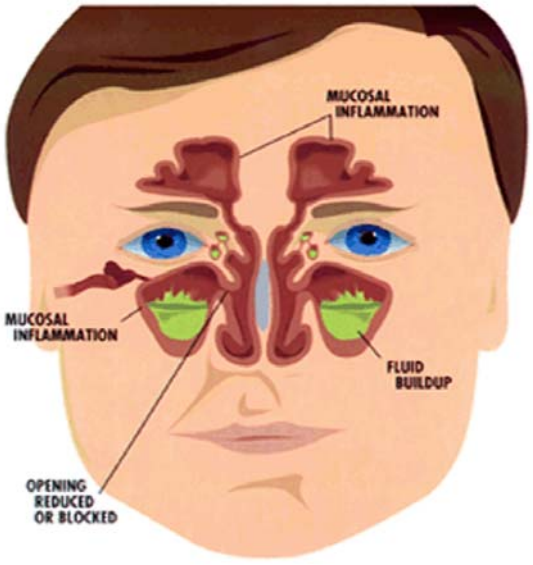
Local defense mechanisms and the ciliary removal of locally deposited bacteria usually keep the sinus cavity sterile. Defective local immunoglobulin responses toward specific airway pathogens, alterations in locally produced secretory immunoglobulin A and immunoglobulin degradation by leukocyte proteases are important features in sinusitis.

The inflammatorily induced lesions of the upperway cilia are usually restored and function normalizes after acute viral rhinitis if no complication arises. During inflammation ultra structural changes with secondary ciliary dysfunction and local proteolytic enzymes reduce the ciliary beat frequency. When the infection is treated, ciliary function is usually restored.

RELATED TO THE LACRIMAL DUCT



PATHOLOGY OF SINUSITIS



In sinusitis, reduction of goblet cells is apparent, together with depletion of granula and distension of the glandular ducts occurred. These qualitative and quantitative changes in secretion are probably of greater importance to the impairment of mucociliary transport.

FEATURES OF INDIVIDUAL SINUSITIS

ACUTE MAXILLARY SINUSITIS.

Acute maxillary sinusitis is the commonest type of sinusitis.The ostium of the maxillary sinus is situated high up in the medial wall, an unfavourable place for drainage. This predisposes to blockage and infection.

CLINICAL FEATURES

Symptoms

1. **Pain**

It may be present over the sinus or the upper jaw. It may be referred to the frontal area, temple or above the ear or to the teeth. Pain is stabbing or aching in character. This is made worse by bending down or coughing and sneezing.

2. **Nasal discharge**

It is mucoid initially, soon becomes purulent.

3. Nasal congestion

On affected side occurs, due to oedema of the nasal mucosa and rhinorrhoea.

4.Post nasal drip

Occurs when excessive purulent discharge drains through the posterior choanae.

4. Disorders of smell

Include hyposmia or Cacosmia

5. Nasal resonance may change due to blocking of the nose.

6. Epistaxis may be occasionally present due to congestion.

7**. Dry cough** – may present due to the post nasal drip which tickle into oropharynx.

8. Constitutional symptoms

Headache, heaviness of head, fever, malaise, body ache, halitosis, heaviness of head.

Signs

1. INSPECTION

The cheek may be oedematous and reddish.

2. PALPATION

Tenderness can be elicited by pressure or tapping on the canine fossa.

3. ANTERIOR RHINOSCOPY

Nasal mucosa is red, oedematous with engorged turbinates, mucopurulent secretions may present in the middle meatus.

4. POSTERIOR RHINOSCOPY:- Pus is seen in the middle meatus.

5. Postural test may be positive.

Investigations:

1. Trans illumination test :- The affected sinus is opaque and no crescent of light is seen in infraorbital rim.
2. X ray PNS :- Water's view will show haziness, opacity or fluid level in the affected sinus.
3. Diagnostic nasal endoscopy will show pus in the middle meatus.

ACUTE FRONTAL SINUSITIS

It is less common than maxillary sinusitis.

CLINICAL FEATURES :

Symptoms :

1. **Headache :** Usually severe and localized over the affected sinus. It is commonly known as "vacuum headache" or "office headache". It starts early in the morning reaches maximum by midday and gradually subsides.
2. Purulent nasal discharge may be present.

Signs

1. There may be oedema of the upper eyelids.
2. Tenderness over the anterior wall or the floor of the sinus is characteristic.

3. Anterior rhinoscopy may show congested nasal mucosa with presence of mucopurulent discharge in the anterior part of the middle meatus.

Investigations:

X-ray PNS :- Water's and caldwells' view shows haziness, opacity of the affected frontal sinuses.

ACUTE ETHMOID SINUSITIS

It is common in children. It often accompanies infection of other sinuses.

CLINICAL FEATURES

Symptoms

1. Pain

It is present mainly over the bridge of the nose or at the inner canthus. Posterior ethmoidal sinusitis gives pain behind the eye. Sometimes pain may be referred to parietal eminence.

2. Periorbital oedema

May be present particularly at the inner canthus and lower lid with increased lacrimation.

3. Pyrexia and malaise.

Signs

1. Tenderness is elicited on either side of the bridge of the nose.
2. On anterior rhinoscopy hyperaemia, oedema of nasal mucosa, engorgement of middle turbinate and discharge is seen. In anterior group involvement, pus is seen in the anterior part of middle meatus. In posterior group, discharge is seen in the superior meatus.

Investigations:

1. X ray PNS : shows haziness over the ethmoidal area.
2. Nasal endoscopy may be done to confirm the diagnosis.

ACUTE SPHENOID SINUSITIS

CLINICAL FEATURES

Symptoms

1. Headache -dull aching, retro orbital, retro auricular or occipital.
2. Post nasal drip.

Signs

Posterior rhinoscopy shows purulent discharge trickling from the superior meatus tracking behind the torus tubaris.

Investigations:

1. X ray PNS : Lateral view demonstrates the haziness of sphenoid sinus.
2. Diagnostic nasal endoscopy.

CHRONIC SINUSITIS

Sinus infection lasting for 3 months and years is called chronic sinusitis. Repeated attacks of acute sinusitis leads to chronic sinusitis. The aetiological factors & bacteriology is the same as that of acute sinusitis.

PATHOLOGY

1. Hypertrophic type

As a result of increased vascular permeability, hypertrophy and polypoidal changes of the lining mucosa occurs.

2. Atrophic type

It is less common and characterized by the loss of respiratory epithelium and general flattening of the epithelium as a result of endarteritis obliterans.

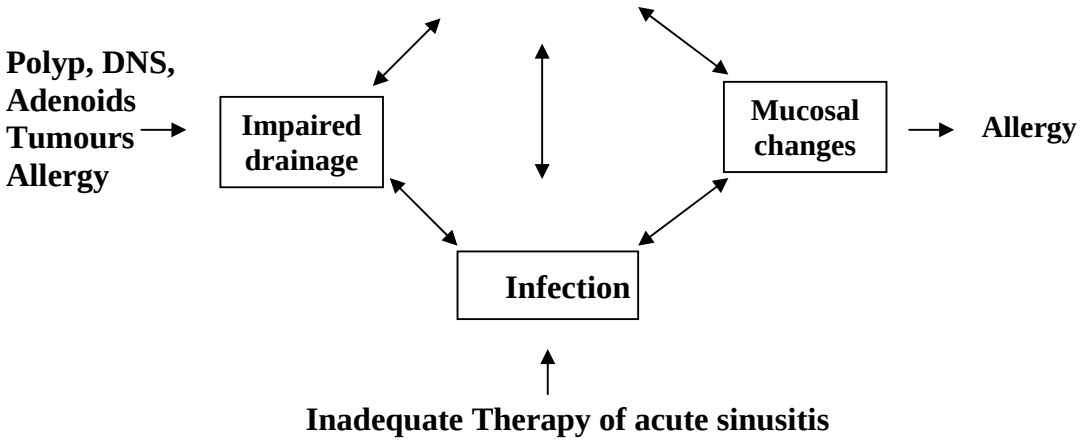
PATHOPHYSIOLOGY :

Acute infection destroys normal ciliated epithelium impairing drainage from the sinus. Pooling and stagnation of secretions in the sinus invites infection. Persistence of infection causes mucosal changes, such as loss of cilia, oedema and polyp formation, thus continuing the vicious cycle.

Pollution, chemicals, infection.

↓

Loss of Cilia



CLINICAL FEATURES

Symptoms

1. Nasal discharge – mucopurulent, purulent.
2. Nasal obstruction due to oedema of the turbinates and thick tenacious secretion.
3. Hawking and frequent clearing of the throat due to post nasal discharge.
4. Headache – dull aching with discomfort localized to the involved sinus.
5. Smell disturbance – Hyposmia or anosmia
6. Epistaxis
7. General symptoms – low grade fever, lassitude etc.

Signs

1. Tenderness on applying pressure over the sinuses may or may not be present.
2. Anterior rhinoscopy – swollen mucosa with engorged turbinates.
3. Posterior rhinoscopy shows copious post nasal drip seen over the upper surface of the soft palate.

Investigations:

X ray PNS:

1. Water's view will show haziness, thickening or polypoidal changes of the lining mucosa or a fluid level in the maxillary sinus.
2. Caldwell's view is useful in frontal and ethmoidal sinusitis.
3. Lateral view of skull is helpful in sphenoidal sinusitis.
4. CT scan of the nose and paranasal sinuses is useful in detecting sinus pathology.

Complications of sinusitis

The paranasal sinuses are situated close to the eyes, brain and nose. Infection from the sinuses can easily spread from the sinuses to the orbit and intracranial cavity giving rise to serious complications. The complications may be

- **Nasal complications**

1. Chronic rhinitis
2. Secondary atrophic rhinitis
3. Chronic hypertrophic rhinitis
4. Nasal polyposis

- **Orbital complications**

1. Orbital cellulitis
2. Orbital abscess
3. Retrobulbar neuritis
4. Superior orbital fissure syndrome
5. Orbital apex syndrome

- **Pharyngeal and laryngeal complications**

1. Pharyngitis
2. Tonsillitis

- **Intracranial complications**

1. Meningitis
2. Encephalitis
3. Extradural abscess
4. Subdural abscess
5. Frontal lobe abscess of the brain
6. Cavernous sinus thrombosis

❖ **Ear complications**

1. Eustachian catarrh and middle ear effusion
2. Chronic suppurative otitis media

❖ **Bony complications**

1. Osteomyelitis

❖ **Miscellaneous**

1. Mucoceles
2. Pyoceles
3. Oroantral fistula

Prognosis :

Sinus infection when treated in an appropriate manner early in the course of the illness can usually be treated effectively. Sinus infections are usually curable with self care measures and medical treatment.

Materials & Methods

MATERIALS AND METHODS

The Clinical study of **"Pitha Thalainokkaadu"** was carried out in Post Graduate Department of Maruthuvam, Govt. Siddha Medical College, attached to Arignar Anna Hospital, Arumbakkam, Chennai during 2006 - 2007.

40 patients of both sexes of various adult age groups were selected. 20 patients of them were admitted in the In-Patient wards and other 20 cases were treated in O.P. department. All necessary investigations were done for them. All the patients were treated with the trial medicines and daily follow-up was done. After being discharged, the inpatients were asked to have further treatment as out patients in the O.P. department.

Data Collections :

Literary evidence collected from various

- Siddha Literature
- Books on Modern medicines
- Medical Journals

Duration of Treatment : 48 days

Criteria for selection :

1. Patients having the following clinical features:

- Nasal discharge
- Recurrent sneezing
- Nasal congestion
- Headache
- Heaviness of head
- Pain & tenderness in the para nasal sinus region

2. Radiological Findings :

- Haziness or opacity seen in the affected sinuses
- Inferior turbinate hypertrophied
- Deviated nasal septum

Criteria for exclusion :

- Vasomotor rhinitis
- Sinusitis in children

Evaluation of clinical parameters :

1.During treatment the cases were subjected to careful interrogation.

2 Investigations :

- All patients were subjected to routine lab investigations like TC, DC, ESR, Hb, sugar, urea& cholesterol in blood.
- Routine Urine examination for albumin, sugar, deposits and motion test for ova and cyst.
- Absolute Eosinophil count is recorded from private lab centres.
- X ray (PNS) is taken to confirm the diagnosis.

Diagnosis:

All the patients were subjected to Siddha mode of investigations including poriyaal Therthal, Pulanaal arithal, Mukkutra Nilaigal, Envagai Thervugal and Udal Kattugal.

Case Sheet Proforma :

All clinical signs and symptoms of **"Pitha Thalainokkaadu"**, history of the present and the past illness, personal history, family history, habits and occupation were recorded. Lab investigations, Radiological investigation and prognosis were recorded for analysis.

Selection of the Trial Medicines :

The following medicines were selected on the basis of Siddha literature and given.

1. Peenisa Choornam	:	1gm with honey, twice daily
2. Kungumapoo Nasiyum	:	2 drops instilled in both nostrils twice daily.
3. Vettiver Thylum	:	30ml given for head bath, to be taken twice a week.

Annexure :

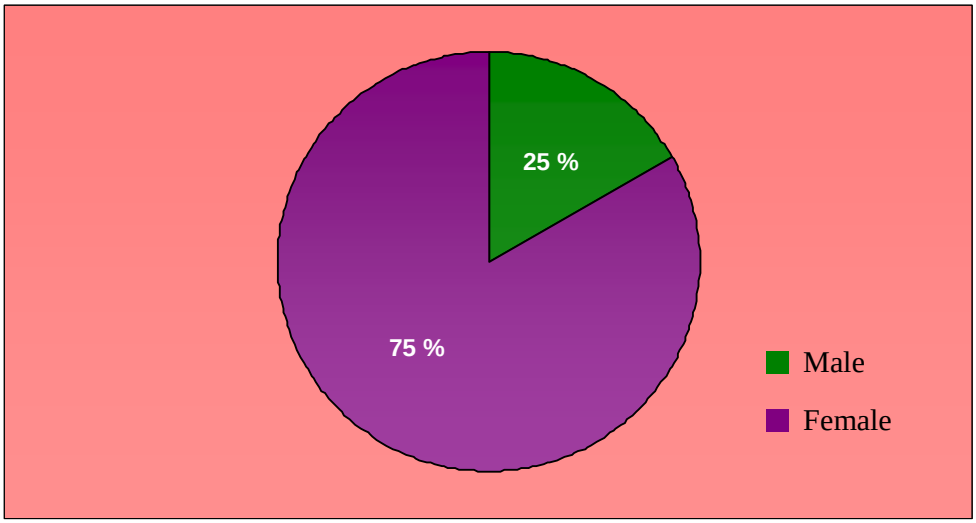
I. Preparation and the properties of the Trial medicines
II. Bio-chemical analysis
III. Qualitative & Quantitative analysis
IV. $_{P}$H of Nasiyum
V. Microbiological study
VI. Pharmacological studies
VII. Bio-statistic analysis
VIII. Case sheet proforma

Results & Observation

TABLE – I

SEX DISTRIBUTION

Sl. No.	Sex	Number of Cases	Percentage (%)
1.	Male	5	25
2.	Female	15	75



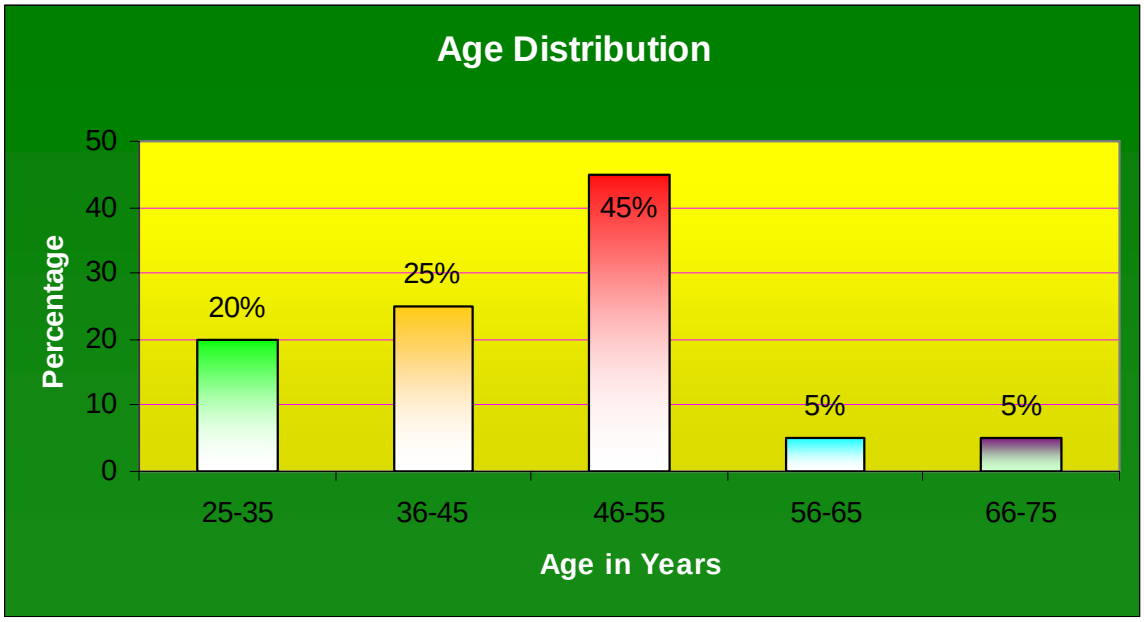
INFERENCE

During the author's clinical study 15 female patients (75%) and 5 male patients (25%) were the participants.

TABLE -2

AGE DISTRIBUTION

Sl. No.	Age in years	Number of cases	Percentage (%)
1.	25 – 35	4	20
2.	36 – 45	5	25
3.	46 – 55	9	45
4.	56 – 65	1	5
5.	66 – 75	1	5



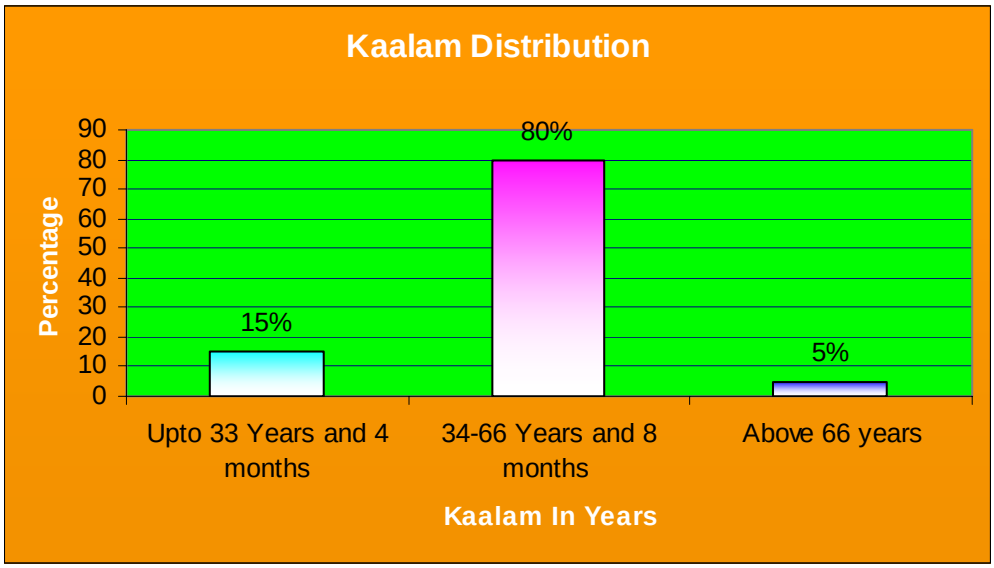
INFERENCE

In the author's clinical study, the author observed that the patients belonging to the age group between 46-55 years were affected 45% of Pitha Thalainokkaadu. Then, the age group between 36-45 years were affected 25%, the age group between 25-35 years by 20% and the age groups between 56- 65 and 66-75 years were affected 5%

TABLE -3

KAALAM DISTRIBUTION

Sl. No.	Kaalam in years	Number of cases	Percentage (%)
1.	Upto 33 and 4 months	3	15
2.	34 – 66 and 8 months	16	80
3.	Above 66	1	5



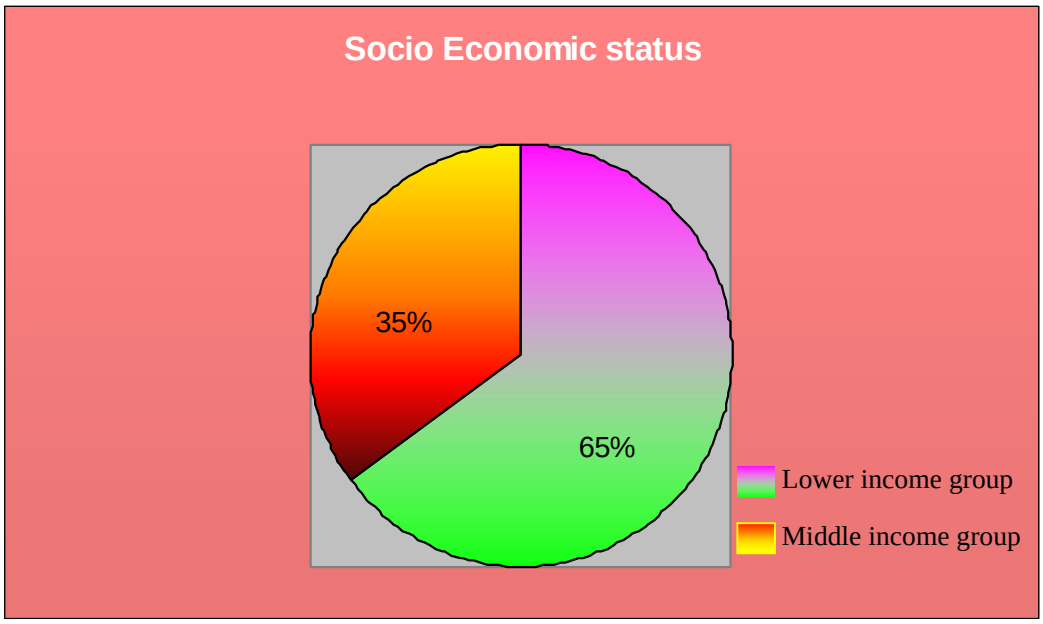
INFERENCE

In the author's clinical study, the patients between 34–66 years and 8 months of age were affected 80%, 15% in the age group upto 33 years and 4 months and 5% in the age group of above 66 years.

TABLE - 4

SOCIO - ECONOMIC STATUS

Sl. No.	Socio - Economic Status	Number of cases	Percentage (%)
1.	Lower Income Group	13	65
2.	Middle Income Group	7	35



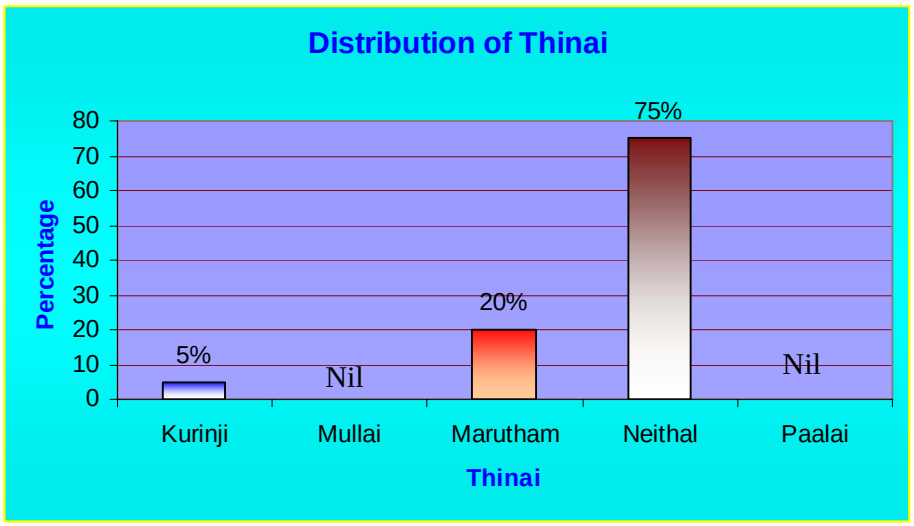
INFERENCE

In the author's observation 65% belong to the lower income group and 35% belong to the middle income group.

TABLE - 5

DISTRIBUTION OF THINAI

Sl. No.	Thinai	Number of cases	Percentage (%)
1.	Kurinji	1	5
2.	Mullai	-	-
3.	Marutham	4	20
4.	Neithal	15	75
5.	Paalai	-	-

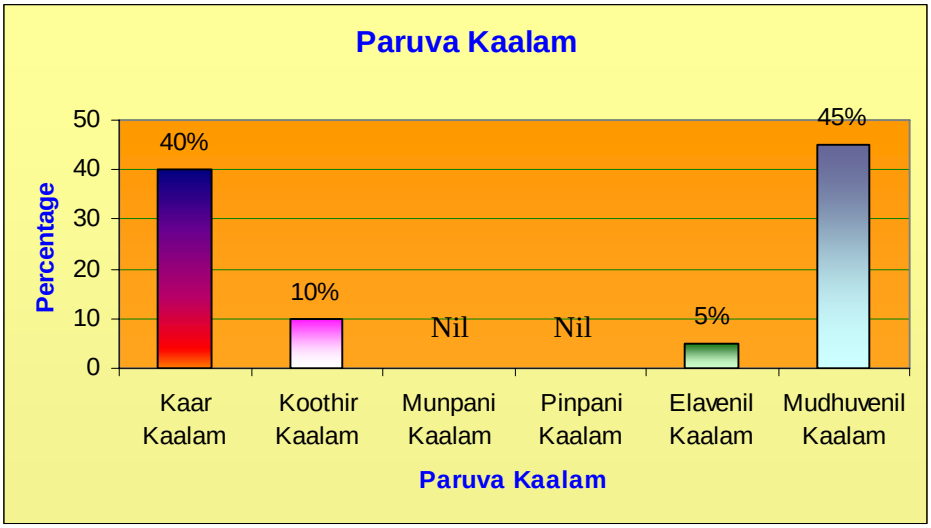


INFERENCE

In the author's observation 75% patients belong to the Neithal Thinai 20% belong to Marutham and 5% belong to Kurinji Thinai.

TABLE -6
PARUVAKAALAM

Sl. No.	Paruvakaalam	Number of cases	Percentage (%)
1.	Kaar Kaalam (Aavani – Purataasi)	8	40
2.	Koothir Kaalam (Iypasi – Kaarthigai)	2	10
3.	Munpani Kaalam (Maargazhi – Thai)	-	-
4.	Pinpani Kaalam (Maasi – Panguni)	-	-
5.	Elavenil Kaalam (Chithirai – Vaikasi)	1	5
6.	Mudhuvenil Kaalam (Aani – Aadi)	9	45



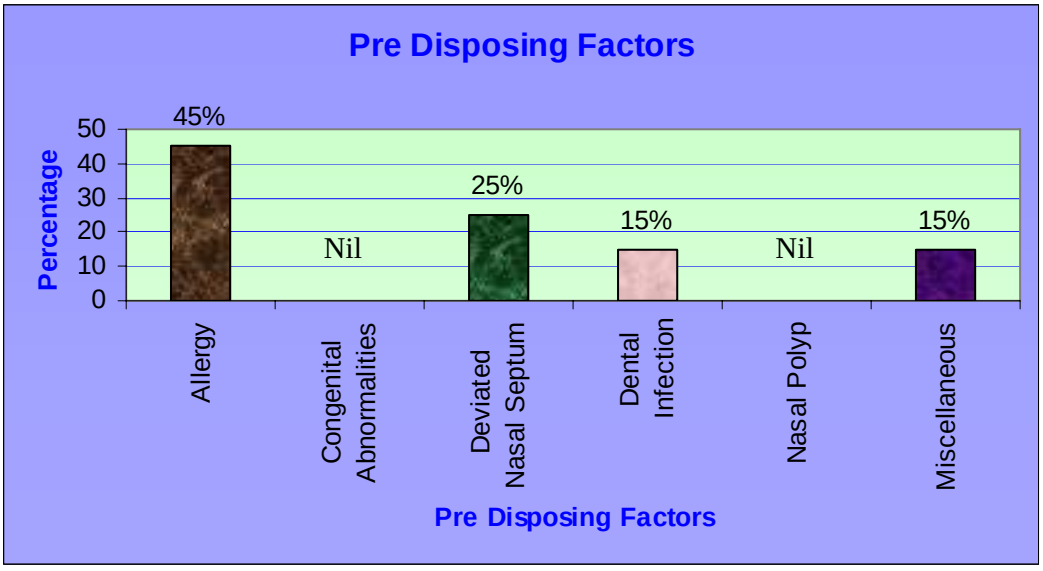
INFERENCE

In the author's observation 45% patients were affected in Mudhuvenil Kaalam, 40% patients in Kaar Kaalam, 10% in Koothir and 5% in Elavenil Kaalam.

TABLE – 7

PRE-DISPOSING FACTORS

Sl. No.	Predisposing Factors	Number of cases	Percentage (%)
1.	Allergy	9	45
2.	Congenital abnormalities	-	-
3.	Deviated nasal septum To Right To Left	5 4 1	25 20 5
4.	Dental Infection	3	15
5.	Nasal Polyp	-	-
6.	Miscellaneous	3	15



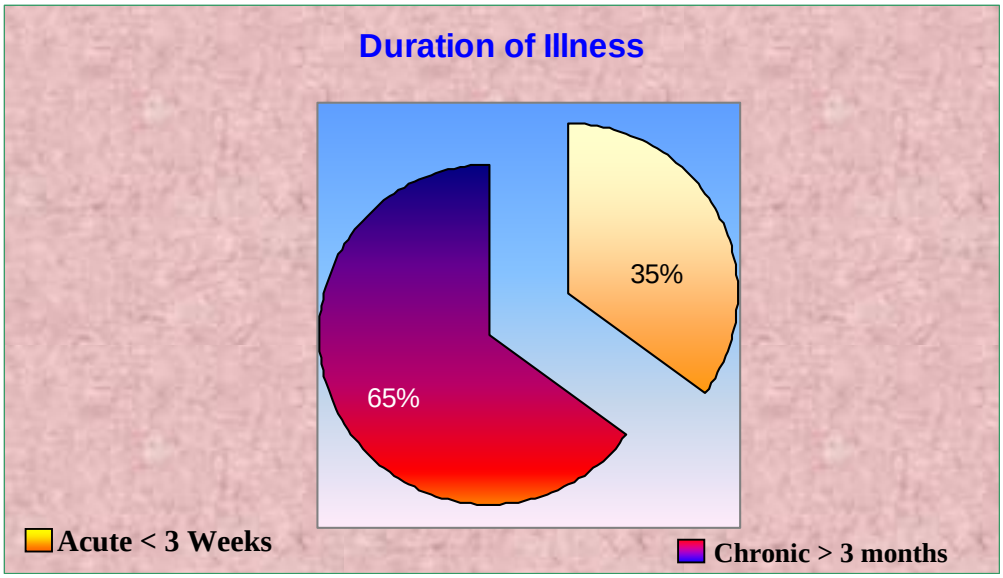
INFERENCE

In author's clinical study 45% patients were affected due to allergy, 25% patients due to deviated nasal septum, 15% patients due to dental infection and other 15% patients due to miscellaneous factors.

TABLE – 8

DURATION OF ILLNESS

Sl. No.	Duration of illness	Number of cases	Percentage (%)
1.	Acute < 3 Weeks	7	35
2.	Chronic > 3 Months	13	65



INFERENCE

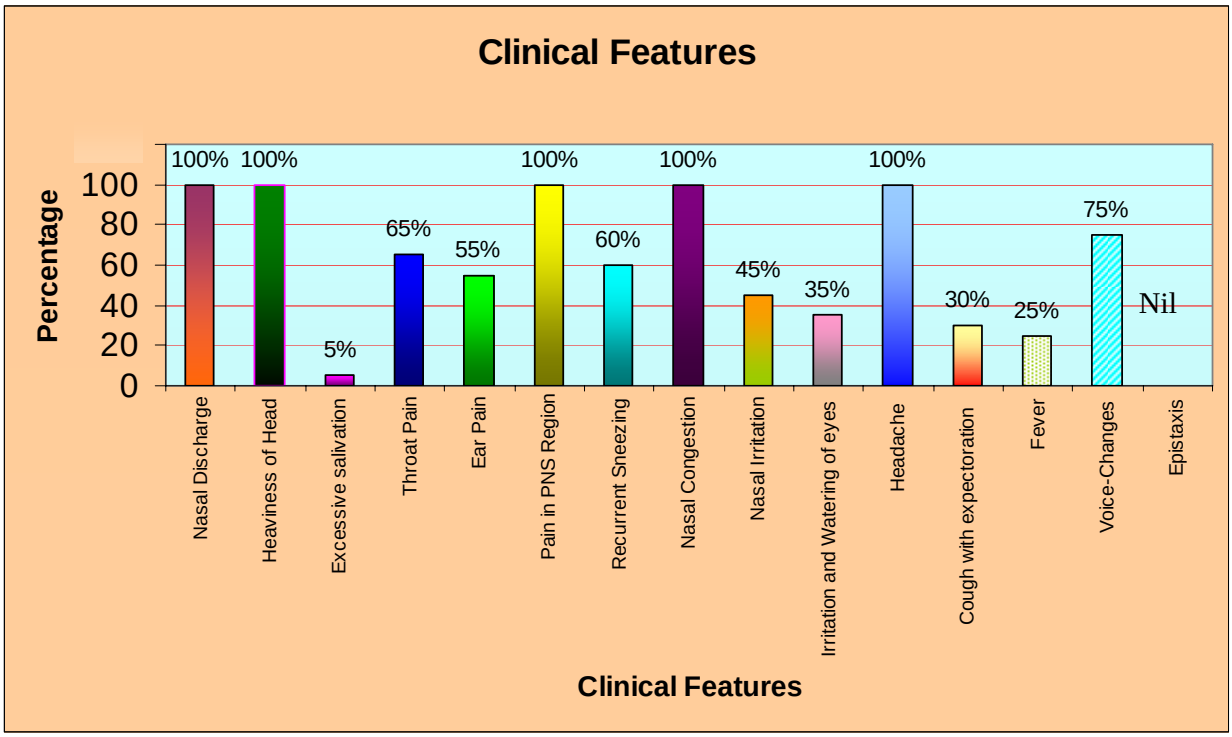
In the author's clinical study, 65% patients suffered from chronic illness and 35% patients suffered from acute illness.

TABLE – 9

CLINICAL FEATURES

BEFORE TREATMENT

Sl. No.	Clinical Features	Number of cases	Percentage (%)
1.	Nasal discharge	20	100
2.	Heaviness of head	20	100
3.	Excessive Salivation	1	5
4.	Throat pain	13	65
5.	Ear pain	11	55
6.	Pain and tenderness in the PNS Region	20	100
7.	Recurrent Sneezing	12	60
8.	Nasal Congestion	20	100
9.	Nasal Irritation	9	45
10.	Irritation & Watering of Eyes	7	35
11.	Headache	20	100
12.	Cough with expectoration	6	30
13.	Fever	5	25
14.	Voice – Changes	15	75
15.	Epistaxis	-	-

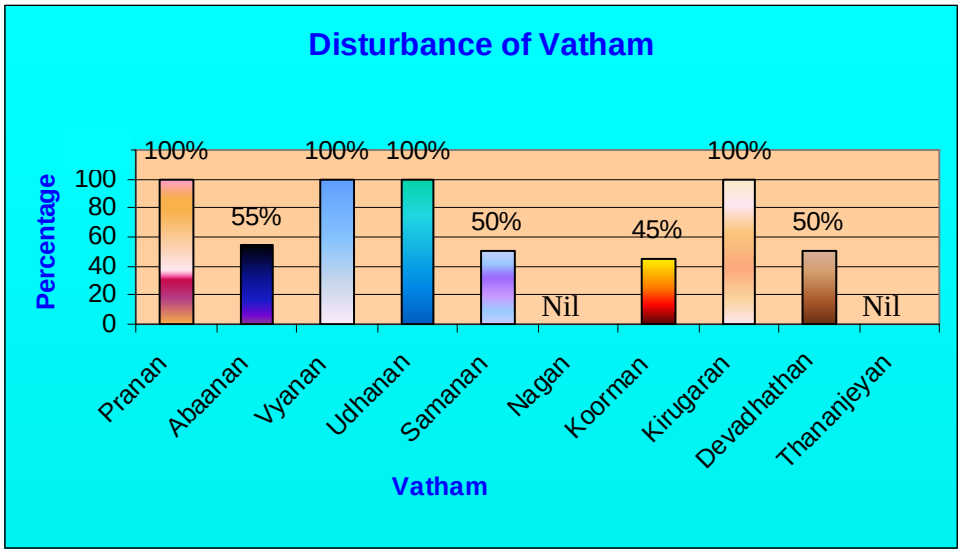


INFERENCE

In the author's clinical study, the patients suffered from nasal discharge, nasal congestion, pain and tenderness in the affected paranasal region, headache, and heaviness of head (100%). excessive salivation (5%), throat pain (65%) ear pain (55%) recurrent sneezing (60%) nasal irritation (45%), irritation and watering of eyes (35%), cough with expectoration (30%), fever (25%) and voice changes (75%) of cases were affected.

TABLE – 10
DISTURBANCE OF MUKKUTRAM
A. VATHAM

Sl. No.	Vatham	Number of cases	Percentage (%)
1.	Praanan	20	100
2.	Abaanan	11	55
3.	Vyanan	20	100
4.	Udhanan	20	100
5.	Samanan	10	50
6.	Naagan	-	-
7.	Koorman	9	45
8.	Kirugaran	20	100
9.	Devadhathan	10	50
10.	Thananjeyan	-	-



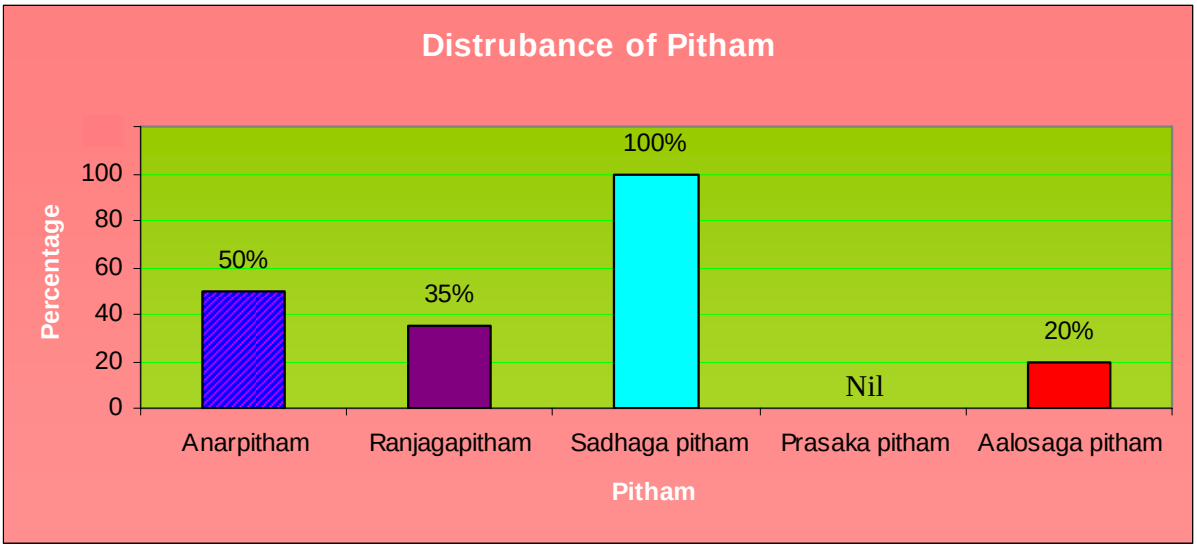
INFERENCE

During the author's clinical work Praanan, Vyaanan, Udhanan, Kirugaran were found to have been affected in all the cases (100%). Abaanan in 55%, Samanan and Devadhathan 50% and Koorman in 45%.

TABLE – 11

B. PITHAM

Sl. No.	Pitham	Number of cases	Percentage (%)
1.	Anarpitham	10	50
2.	Ranjagapitham	7	35
3.	Sadhagapitham	20	100
4.	Prasakapitham	-	-
5.	Aalosaga pitham	4	20



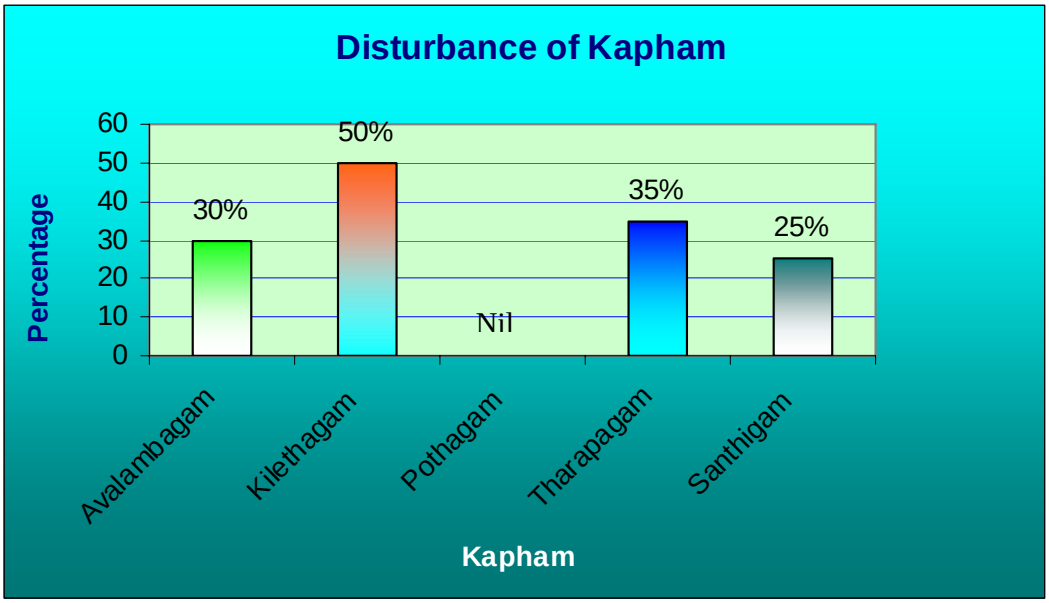
INFERENCE

In the author's clinical work, Sadhagapitham was found to have been affected in 100%, Anarpitham 50%, Ranjagapitham 35% and Aalosaga pitham 20% of cases.

TABLE – 12

C. KAPHAM

Sl. No.	Kapham	Number of cases	Percentage (%)
1.	Avalambagam	6	30
2.	Kilethagam	10	50
3.	Pothagam	-	-
4.	Tharpagam	7	35
5.	Santhigam	5	25



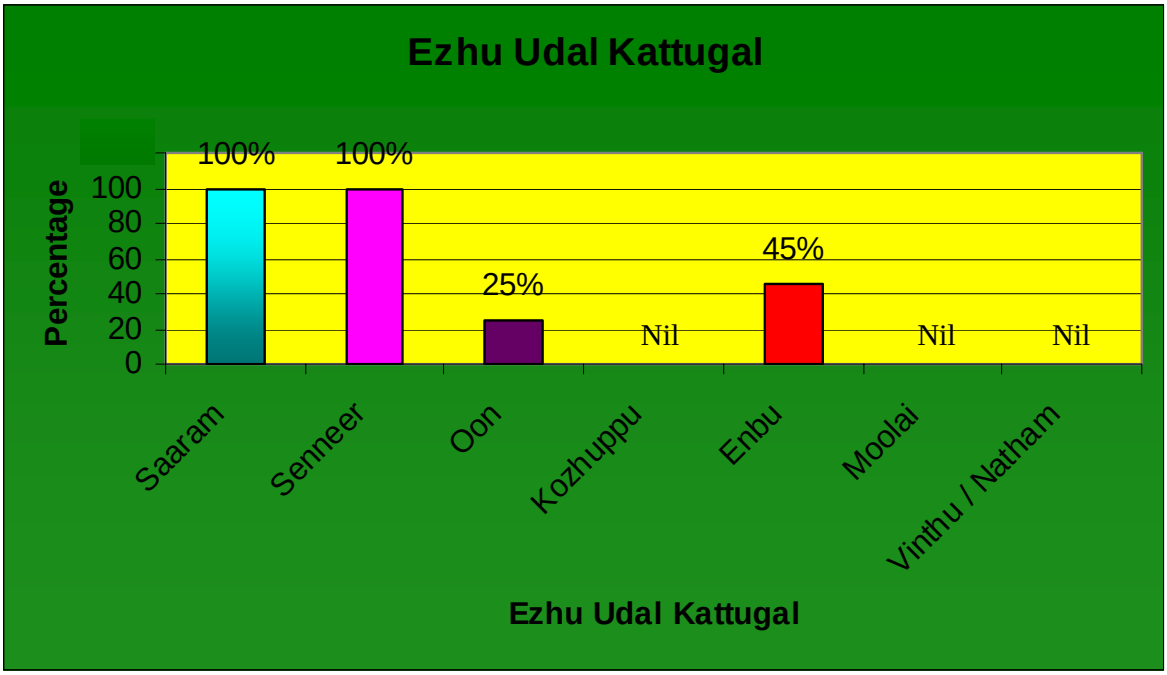
INFERENCE

In the author's clinical study, 50% kilethagam, Tharpagam 35%, Santhigam 25%, and avalambagam 30% were affected.

TABLE – 13

EZHU UDAL KATTUGAL

Sl. No.	Ezhu Udal Kattugal	Number of cases	Percentage (%)
1.	Saaram	20	100
2.	Senneer	20	100
3.	Oon	5	25
4.	Kozhuppu	-	-
5.	Enbu	9	45
6.	Moolai	-	-
7.	Vinthu / natham	-	-



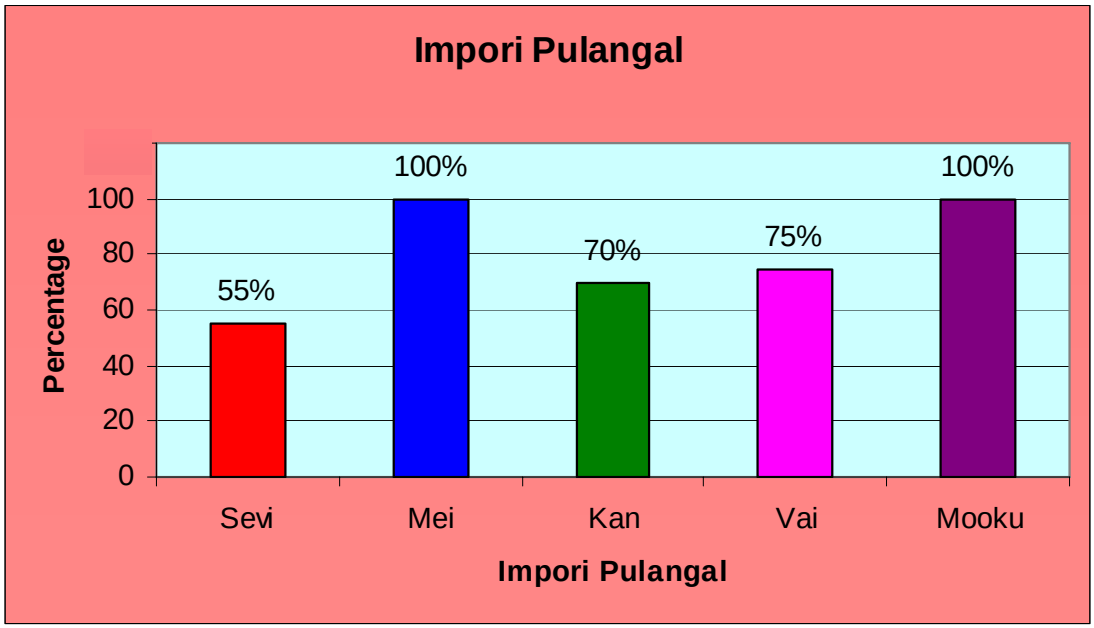
INFERENCE

In Ezhu Udal Kattugal, it was found that Saaram and Senneer 100%, Enbu 45% and Oon 25% were affected.

Table – 14

IMPORI PULANGAL

S.No	Impori pulangal	Number of cases	Percentage (%)
1.	Sevi	11	55
2.	Mei	20	100
3.	Kan	14	70
4.	Vaai	15	75
5.	Mooku	20	100



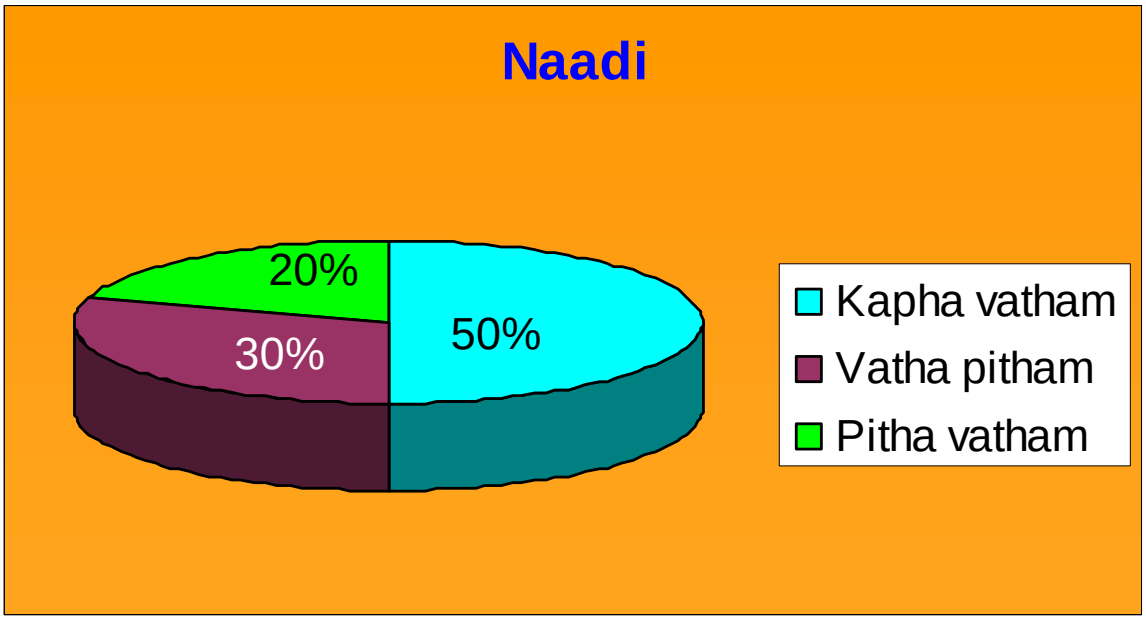
INFERENCE

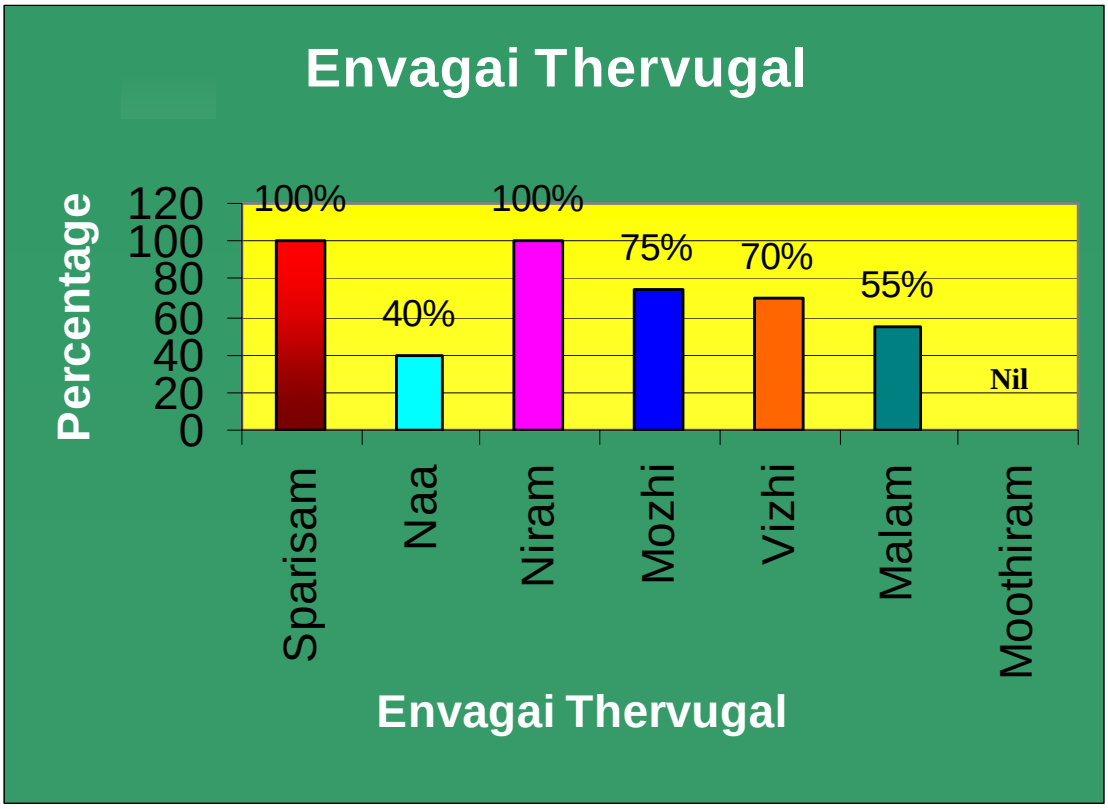
In the author's clinical study mei and mooku were found to have been affected 100%, vaai 75% kan 70% and sevi 55% were affected.

TABLE -15

ENVAGAI THERVUGAL

Sl. No.	Envagai Thervugal	Number of cases	Percentage (%)
1.	Naadi		
	Kapha Vatham	10	50
	Vathapitham	6	30
	Pitha vatham	4	20
2.	Sparisam	20	100
3.	Naa	8	40
4.	Niram	20	100
5.	Mozhi	15	75
6.	Vizhi	14	70
7.	Malam	11	55
8.	Moothiram	-	-





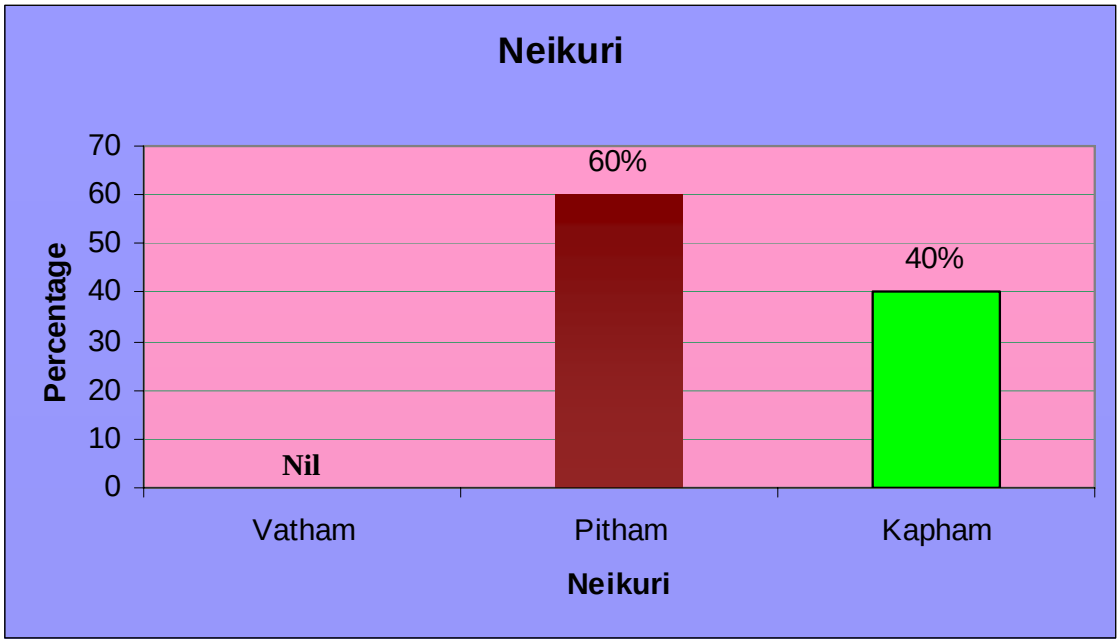
INFERENCE

In Envagai Thervugal, it was found that Kapha vatham Naadi in 50% cases, Vathapitham in 30% cases and Pitha Vatham in 20% cases. Sparisam was affected 100% due to pain and tenderness in the PNS region and among it 25% cases had fever. Naa was affected in 40%of cases. (Among them 4 cases had coated and pallor tongue, 1 had excessive salivation and 3 cases had pallor tongue alone) Niram was affected 100% due to the reddishness of nasal mucosal congestion. Mozhi was affected in 75% cases. Vizhi was affected in 70% cases (Among them, 4 suffered from irritation and watering of eyes, 5 had pallor of conjunctiva, 2 had diminished vision, 1 had watering of eyes and diminished vision, 1 had watering of eyes, diminished vision and pallor of conjunctiva, 1 had watering of eyes and pallor of conjunctiva. Malam was affected in 55% cases due to constipation.

TABLE – 16

NEIKURI

Sl. No.	Thathus	Neikuri	Number of Cases	Percentage (%)
1.	Vatham	Spread like snake	-	-
2.	Pitham	Spread like ring	12	60
3.	Kapham	Spread like pearl	8	40



INFERENCE

In Neikuri, Pitha neer Neikuri (60%), Kapha Neer Neikuri (40%) were seen.

TABLE – 17

CLINICAL RESPONSE

Sl. No	Clinical Features	Before Treatment		After treatment			
		No. of Cases Suffered	%	No. of Cases Relieved	%	No. of Cases Not Relieved	%
1.	Nasal discharge	20	100	15	75	5	25
2.	Heaviness of Head	20	100	15	75	5	25
3.	Excessive Salivation	1	5	1	100	-	-
4.	Throat pain	13	65	12	92.3	1	7.7
5.	Ear pain	11	55	10	90.9	1	9.1
6.	Pain and tenderness in PNS region	20	100	15	75	5	25
7.	Recurrent sneezing	12	60	8	66.7	4	33.3
8.	Nasal congestion	20	100	15	75	5	25
9.	Nasal irritation	9	45	6	66.7	3	33.3
10.	Irritation and watering of eyes	7	35	5	71.4	2	28.6
11.	Headache	20	100	6	80	4	20
12.	Cough with expectoration	6	30	5	83.3	1	16.7
13.	Fever	5	25	5	100	-	-
14.	Voice – changes	15	75	13	86.7	2	13.3

INFERENCE

In the author's clinical study clinical features of nasal discharge, heaviness of head, pain and tenderness in the PNS region and nasal congestion were relieved 75%, excessive salivation and fever 100%, Throatpain 92.3%, Earpain 90.9%, Recurrent sneezing and nasal irritation 66.7%, irritation and watering of eyes 71.4%, headache 80%, cough with expectoration 83.3% and voice changes 86.7% were relieved.

CLINICAL RESPONSE

BEFORE TREATMENT AND AFTER TREATMENT

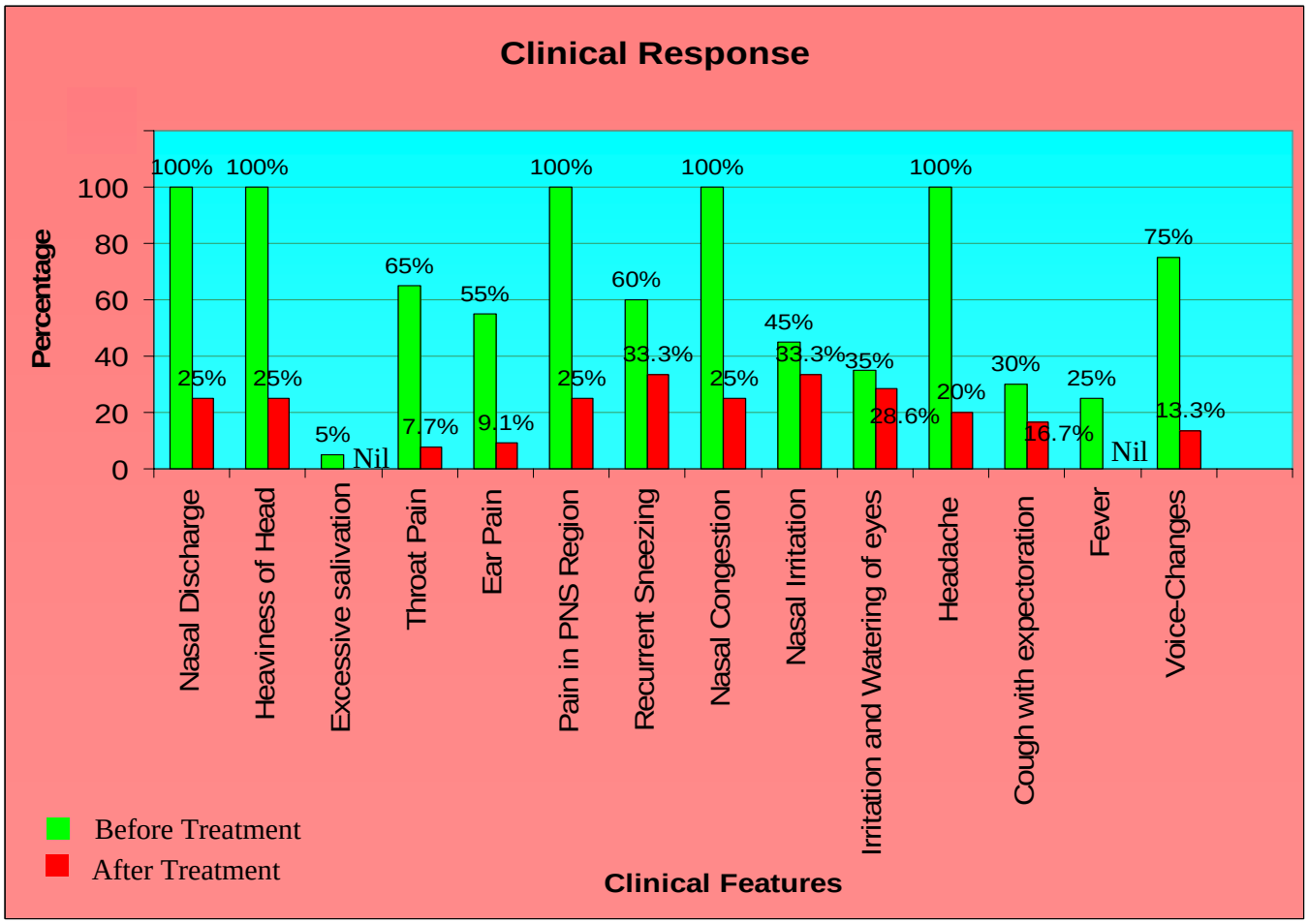
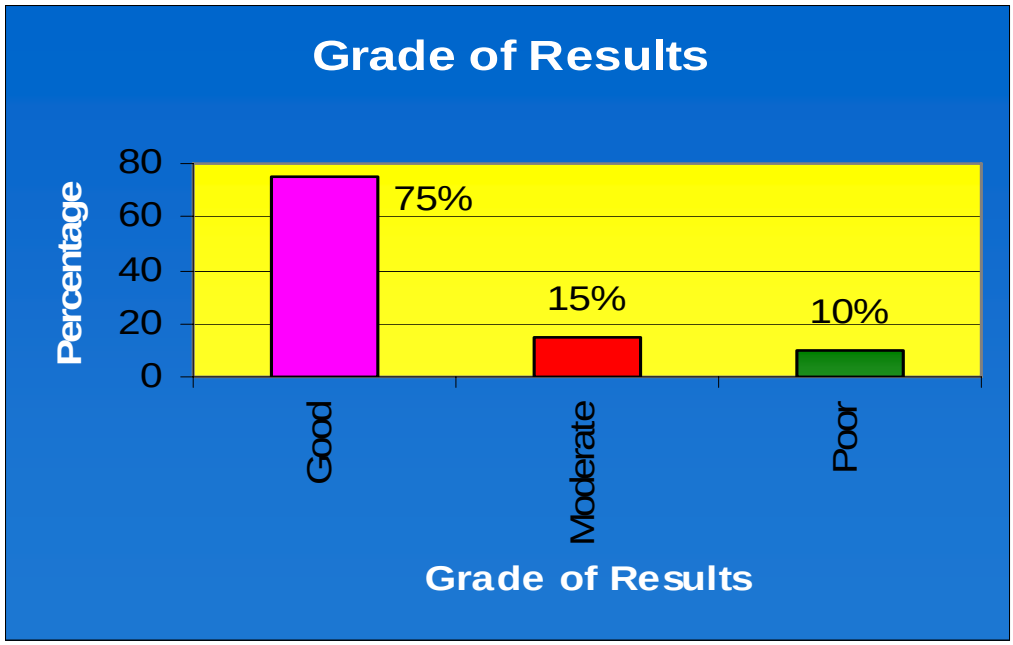


TABLE – 18

GRADE OF RESULTS

S.No	Grade of results	No. of cases	Percentage (%)
1.	Good	15	75
2.	Moderate	3	15
3.	Poor	2	10



INFERENCE

From the above observations,

Among 20 patients

- 75% of them had shown good improvement
- 15% of them with moderate improvement
- 10% had poor response.

Mr. PRAKASH 27/ M

I.P.No. 1039 BEFORE TREATMENT 31.07.2007

AFTER TREATMENT 16.09.2007

Discussion

DISCUSSION

Pitha Thalainokkaadu, a clinical entity described by Yugimunivar in his Yugi Vaithya Chinthamani is one among the ten types of Thalianokkaadugal dealt under Vatha diseases. It's clinical features are similar to that of sinusitis.

Pitha Thalainokkaadu is a very common medical problem affecting one in five people in 100 being diagnosed every year. The clinical features of the disease have been immensely studied and the efficacy of the trial medicines have been observed in this study. 40 patients of both sexes of various adult age groups were selected. 20 patients of them were admitted in the In-patient wards and the other 20 patients treated as outpatients in the O.P. department. The observations found in the I.P. patients were discussed as follows:

The present studies have shown the relative preponderance of the incidence of **Pitha Thalainokkaadu** is in middle age group (46-55 yrs 45% and 36-45 yrs 25%) with dominance of female patients (75%). The high incidence of kaalam, when patients were affected is the Pitha kaalam (80%).

It was also noticed that 65% patients belong to the lower income group and they would have been affected by this disease due to their imbalanced diet and unhygienic life style.

In this study 75% patients belong to Neithal Thinai and according to Siddha pathology, the incidence of **Pitha Thalainokkaadu** is more expected in Neithal Thinai due to the prime derangement of Vatham.

It was also observed that the maximum seasonal incidence of **Pitha Thalainokaadu** was noted in Mudhuvenil Kaalam (45%) and Kaar Kaalam (40%)

During hot and windy weather conditions, the air is found to be over loaded with positive ions. When the air is high in positive ions, it raises serotonin levels in the brain. The increase in serotonin levels in weather-sensitive people while breathing, stimulates histamine production which triggers allergies and sinusitis.

In this study 45% patients were affected due to allergy, 25% deviated nasal septum, 15% dental infection and other 15% miscellaneous factors like smoking, dietary changes, trauma etc. It was also noticed that the disease is more common in patients who have to go out of their houses daily. Due to exposure they are more prone to various allergens which can produce **Pitha Thalainokkaadu**.

In this study 65% patients were admitted in chronic condition. Repeated exposure to various aetiological factors leads to full fledged clinical features of **Pitha Thalianokaaadu** which gradually attains chronicity. It may also be due to the lack of treatment in acute condition or the over looking of the disease.

Regarding Siddha description of **Pitha Thalainokkaadu**, various clinical features which are mentioned resemble sinusitis. In the author's trial study, the cardinal features like nasal discharge, nasal congestion, headache, heaviness of head, pain and tenderness in the PNS region were observed 100% in all cases. The associated symptoms like recurrent sneezing (60%), excessive salivation (5%) throat pain (65%), ear pain (55%) nasal irritation (45%), irritation and watering of eyes (35%) cough with expectoration (30%) fever (25%) and voice-changes (75%) were observed and taken for the assessment.

In the current study, Mukkutram changes were observed. In Vatham, Praanan, Vyanan, Udhanan, and Kirukaran were affected 100% Abaanan (55%) Samanan (50%) Koorman (45%) and Devadhathan (50%). In Pitham, Anarpitham (50%), Ranjagapitham (35%) Sathaga pitham (100%) and Aalosagapitham (20%)

were affected. In Kapham, Avalambagam (30%), Kilethagam (50%) Tharpagam (35%) and Santhigam (25%) were affected.

Praanan & Udhanan were affected causing nasal discharge, nasal congestion,cough & voice-changes. Kirukaran was affected causing recurrent sneezing, nasal discharge, excessive salivation and cough. Vyanan was affected causing headache, heaviness of head, pain and tenderness in the affected paranasal sinus region and fever. Abaanan was affected causing constipation. Samanan was affected causing loss of appetite. Koorman was affected causing diminished vision (probably due to the old age) and watering of eyes. Devadhathan was affected causing sleeping disturbances.

Pitham was deranged in some cases. Anarpitham was affected causing loss of appetite. Ranjagapitham was affected causing anaemia. &Aalosagapitham was affected causing diminished vision

Kapham was also deranged causing cough with expectoration (avalambagam), loss of appetite (Kilethagam), watering of eyes (Tharpagam) and joint pain (Santhigam).

In Ezhu Udal Kattugal, Saaram (100%) Senneer (100%) Oon (25%) and Enbu (45%) were affected. In Impori pulangal, Mooku (100%) Mei (100%), Vaai (75%) Kan (70%) and Sevi (55%) were affected. Saaram was affected causing tiredness. Senneer was affected causing ESR, Absolute eosinophil count raised and Hb reduced. Oon was affected causing knee joints pain. Enbu was affected causing deviated nasal septum.

In Envagai Thervugal, Naadi, Kapha Vatham 50%, Vatha Pitham (30%) and Pitha Vatham (20%) were noted. It was found to be similar to that of Sathaga naadi and Agathyar naadi which highlight Kapha Vatham for **'Pitha Thalainokaadu'**. Sparisam (100%), Naa (40%), Niram (100%) Mozhi (75%), Vizhi (70%), Malam (55%) were affected. In Neikuri, Pitha Neer (60%), Kapha

Neer (40%) were seen. Sparisam was affected causing pain and tenderness in the PNS region and fever. Naa was affected causing excessive salivation, coated tongue and pallor of the tongue. Niram was affected locally causing reddishness of the nasal mucosa. Mozhi was affected causing hoarseness of voice. Vizhi was affected causing irritation and watering of eyes, diminished vision and pallor of the conjunctiva. Malam was affected causing constipation and it is one of the most important aetiological factors of the disease according to Siddha.

For all the patients routine blood, urine, motion tests were done and X ray PNS was taken. These were recorded to evaluate the nature and extent of changes in relation to the course of the disease, before and after the treatment. It was also observed that 45% cases show marginal increase in Absolute Eosinophil Count and 95% ESR increased and 35% cases show reduced hemoglobin level in the blood. As per the X ray PNS results, 100% of cases were confirmed by the haziness in the affected sinuses.

After confirming the results, the patients were given the trial medicines and instructed to follow the diet and other restrictions based on Siddha Classics. Regarding 'Peenisa choornam', it is a specific for Vatha diseases and sinusitis mentioned in Siddha literature. Honey is used as an adjuvant with this medicine and its action is described by Theran as,

"mDghd kha;g;gpd; mtpH;j Kkha;j; njhd;wp
fdkhd njfepiy fhl;og; - gpDnk
aurd; Kjy;nthh; iua[khl;L tpj;jhny
gpurj;jpdhw; nghk; gpzp"

Fzghlk; jhJrPt tFg;g[gf;fk; 502

The bio-chemical analysis shows that 'Peenisa Choornam' is having acid radicals such as sulphate, chloride, phosphate and basic radicals such as calcium, magnesium, potassium, sodium and miscellaneous such as reducing sugar and tannic acid. The microbiological study of Peenisa choornam shows that it is highly sensitive for Staphylococcus aureus and Klebsiella. The

ingredients,kandubaarangi, sadaamanji and kandangathiri had already been proved for antihistamine activity.

Regarding Kungumapoo Nasiyum it plays very important role in correcting the clinical picture of **Pitha Thalainokkaadu** by producing local antiseptic, antispasmodic, anodyne and astringent actions. The bio-chemical analysis shows that its extract is having acid radicals such as sulphate, phosphate and miscellaneous such as reducing sugar and tannic acid. The microbiological study shows that it is mild sensitive for Staphylococcus aureus and highly sensitive for Escherichia coli. Lysozyme is found in nasal secretions, which is responsible for destroying certain bacteria at acidic pH. That this acidic pH factor is present in Kungumapoo Nasiyum is convincingly proved by lab report.

The Pharmacological studies show that the trial medicines Peenisa choornam and Kungumapoo Nasiyum extract are having significant analgesic and anti- inflammatory actions. Both of them have the presence of tannic acid in bio-chemical analysis which protects mucous membranes of the nose.

Siddhars explain the importance of oil bath in curing the diseases of head.

“rhU"; rpuneha; kz;ilapo rhw;Wk; xj;jzk; ghpfhuk;
njUk; ijy'; fghytif epiw g[ifa[k; khf;fpuhzk;
nrU _ypjidawpe;J rpwf;Fk; ghfk; tFg;g[lnd
ghUKdpth; gz;ojh;f;Fg; gfh;e;jhua;e;J bre;jkpHpy;”

- **Mtpaspf;Fk; mKj Kiwr; RUf;fk; gf;fk; 235**

Since, **Pitha Thalainokkaadu** is mentioned as one of the diseases of the head,Vettiver thylum for taking oil bath, is also an effective remedy for **Pitha Thalainokkaadu**.

It was observed that this trial study showed significant clinical improvement in certain clinical manifestations of **Pitha Thalainokaadu**. 100% excessive salivation and fever, throat pain (92.3%) ear pain (90.9%) voice-changes (86.7%) cough with expectoration (83.3%) headache(80%)nasal

discharge, heaviness of head, pain and tenderness in PNS region and nasal congestion(75%) irritation and watering of eyes (71.4%) recurrent sneezing and nasal irritation(66.7%) were relieved.

Absolute Eosinophilic count significantly reduced in 35% patients and marginal decrease in ESR level in all patients. A trend of nominal increase in haemoglobin level was also noticed in 35% anaemic patients that is quite possible because of the improvement in their health.

X ray PNS was taken again in order to make an assessment of the cure. 50% cases showed normal findings and other 40% cases showed mild haziness of the affected sinuses and 10% cases revealed no improvement.

Among 20 patients, 10 patients got relieved completely from the signs and symptoms, and the post x ray (PNS) revealed normal findings. 5 patients got relieved completely from the signs and symptoms and the post X ray revealed mild haziness in the affected sinuses. Totally this is taken as the 75% good result. Another 3 patients showed moderate clinical response and mild haziness seen in the affected sinuses and this is taken as 15% moderate results. And the remaining 2 patients did not reveal any improvement clinically and in X ray results too. This shows 10% poor result.

All the patients responded nicely and not a single patient complained about any adverse or toxic effects. Medical advice was given to prevent the recurrence and to maintain their health in future.

1. Avoid smoky atmosphere and pollutants.
2. Get as much fresh air as possible.
3. A well balanced diet to be taken.

4. Drink adequate quantity of water.
5. All kinds of fruits can be taken excepting those belonging to citrus group such as lemon, orange etc.
6. Vitamin A is the “membrane conditioner” as it helps to build healthy mucus membranes in the head and so the dietary sources having vitamin A like carrot, papaya etc are advised.
7. Avoid smoking, drinking soft drinks and eating junk foods.
8. Take oil bath twice in a week.
9. Avoid day time sleeping.
10. Dental hygiene must be taken care of.

Summary

SUMMARY

The clinical study on **"Pitha Thalainokkaadu"** (Sinusitis) with the administration of the trial medicines of Peenisa Choornam, Kungumapoo Nasiyum and Vettiver Thylum was carried out in the Post graduate Maruthuvam department, Govt. Siddha Medical College, Chennai.

A total of 40 patients were observed in the author's study. Out of 40 patients 20 were treated in the O.P. Department and the remaining in In -patient Wards.

The duration of the treatment was fixed as 48 days. Clinical and pathological assessments were carried out on the basis of both Siddha and Modern medical systems.

The results obtained from the studies are summarized here below :

- More percentage of females 75% were affected than male.
- High incidence of cases was noted in the age group ranging between 46-55 yrs (45%) and in Pitha Kaalam (80%).
- High incidence of cases was observed in the lower income group (65%).
- From the history it was seen that the incidence of **Pitha Thalainokkaadu** was found to be more in the Neithal thinai (75%) and during Mudhuvenil Kaalam (45%) & Kaar Kaalam (40%).
- High incidence of cases was affected due to allergy (45%)
- 65% cases suffered from chronic illness.
- On examination of Uyir thathukkal the following were deranged in more number of cases.

- In Vatham = Praanan, Udhanan, Vyanan, Kirukaran (100%) Abaanan (55%), Samanan (50%), Koorman (45%), Devadhathan (50%)

- In Pitham = Anarpitham (50%), Sadhagapitham (100%), Ranjagapitham (35%) Aalosagapitham (20%)
- In Kapham = Tharpagam (35%), Kilethagam (50%) Avalambagam (30%). Santhigam (25%).

- Among Ezhu udal kattugal saaram (100%) Senneer (100%) Oon (25%) Enbu (45%) were affected.
- In Impori Pulangal, Mei & Mooku (100%), Vai (75%) Kan (70%) & Sevi (55%) were affected.
- Naadi showed Kapha vatham (50%), Vatha pitham (30%) and Pitha vatham (20%).
- In Neikuri, Pitha Neer (60%) & Kapha Neer (40%) were seen.
- 40 cases were given the trial medicines for the duration of 48 days.
- The responses were assessed daily for the inpatients and weekly once for the out patients and recorded in the proforma.
- The patients responded to the medicines showing gradual decrease in signs and symptoms.
- Before treatment, Absolute Eosinophil count in blood was raised in 45% cases. After treatment it was reduced in 35% cases.
- Before treatment, X ray (PNS) showed 100% positive sinusitis findings in all cases. After treatment 75% cases showed good response in I.P. and 55% cases showed good response in O.P.
- The above mentioned results of the studies have given credence to the fact that the trial medicines act effectively in **"Pitha Thalainokkaadu"** (Sinusitis).

Conclusion

CONCLUSION

“Pitha Thalainokkaadu” is primarily due to the derangement of Vatham. But due to the variations in the intrinsic and extrinsic factors, Pitham or Kapham also get deranged with Vatham subsequently. If Pitham is deranged with Vatham it causes pathological changes which result in inflammation of the paranasal sinuses. When the disease becomes chronic, Kapham is also deranged causing increased mucosal secretion in the nose and paranasal sinuses.

Since the author observed that 65% of the **“Pitha Thalainokkaadu”** patients suffered from chronic illness in her study, the trial medicines, Peenisa choornam which predominates with Kaippu suvai neutralizes Kapham and Pitham and reduces the inflammation of the PNS. Kungumapoo Nasiyum which possesses Thuvarppu suvai neutralizes Kapham and Pitham and reduces the inflammation of the PNS and the mucosal secretion by locally clearing the nasal congestion.

From the above observations of the author’s clinical study it can be concluded that these trial medicines are potent and effective in treating **“Pitha Thalainokaadu”**.

Albeit being done in a smaller way, with its conclusive findings and benefits obtained on the basis of the principles enunciated for a life freed from diseases by the Siddhars of ancient times, this study has given an impetus to uphold the Siddha system of Medicine.

Annexure

I. Preparation & The Properties of The Trial Medicines

ANNEXURE – I

PREPARATION AND THE PROPERTIES OF THE TRIAL MEDICINES

I. PEENISA CHOORNAM

Reference - **runge;jpu itj;jpa Kiwfs; - gf;fk; 119**

(rpnuhnuhf rpfpr;ir)

II. KUNGUMAPOO NASIYUM

Reference - **runge;jpu itj;jpa Kiwfs; - gf;fk; 57**

(rpnuhnuhf rpfpr;ir)

III. VETTIVER THYLUM

Reference – **Mtp aspf;Fk; mKj Kiwr; RUf;fk ;- gf;fk; 625**

MEDICINE –I
PEENISA CHOORNAM

Ingredients

1. Kadughu rohani - 105 gms
2. Karkadaga Singhi - 105 gms
3. Kandanghkathiri ver - 35 gms
4. Jadaamanji - 35 gms
5. Siruthekku - 35 gms
6. Indhuppu - 35 gms

PREPARATION

Purified and dried roots are ground into powder and sieved by white cloth into nice powdered form.

Dosage – 1 gram, twice a day, after food

Adjuvant – Honey

Indications – Vatha diseases, Sinusitis

MEDICINE- NO-I

PEENISA CHOORNAM

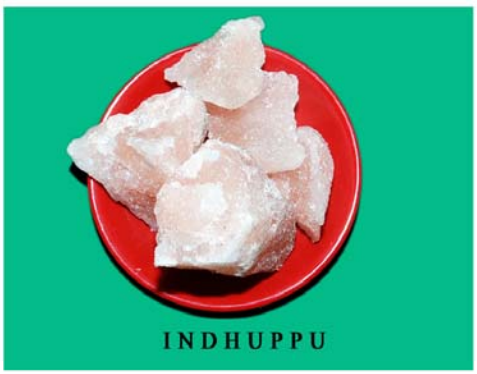
KADUGUROHANI

KARKADAGASINGHI

KANDANGHKATHIRIVER

JADAAMANJI

SIRUTHEKKU



INDHUPPU

PEENISA CHOORNAM

1. Kadughu rohani (fLF nuhfzp)

Botanical name - Picrorrhiza Kurrooa

Family - Scrophulariaceae

Part used - Root

Taste - Kaippu, Kaarppu

Actions - Febrifuge, Cathartic, Stomachic

bghJf; Fzk;:

“khe;j"; Ruikak; tha[fug; ghdhk";
nrh;e;j kyf;fl;L jphpnjhlk; - nghe;j bghl;Lg;
g[z;tapW nehapitnghk; bghw;bfhona ngjpa[z;lhk;
jpz;fLF nuhfzpf;Fj; njh;”

Fzghlk; _ypif tFg;g[gf;fk; 199

2. KARKADAGA SINGHI (fh;f;flfrp';fp)

Botanical Name - Rhus Succedanea

Family - Anacardiaceae

Part used - The Galls

Taste - Thuvarppu

Actions - Astringent, Tonic, Digestive, Expectorant

bghJf;Fzk;

“fh;f;flf rp';fp fg';fhrk; <isbahL
Kf;fy; fpuhzp Kjphpiur;ry; - bghf;bfdnt
rhLfpd;w ngjpiaa["; rhLk; mhpitaiuf;
TLjpw'; bfhL;f;F'; TW.”

- **Fzghlk; _ypif tFg;g[gf;fk; 241**

3. KANDANGHKATHIRI VER (fz;l';fj;jhp nth;)

Botanical Name - Solanum Xanthocarpum

Family - Solanaceae

Part used - Root

Taste - Kaarppu

Actions - Carminative, Expectorant

bghJf;Fzk;

“fhr Rthr';fjpj;j\a ke;jkdy;
tPRRu"; rd;dp tpisnjhlk; - MRW';fhy;
,j;jiua[zp w;;fh vhpfhu"; nrh;f;fz;l
fj;jphpa[z; lhkhfp w;fhz;”

- Fzghlk; _ypif tFg;g[gf;fk; 213

4. JADAAMANJI (rlhkh";rp)

Botanical Name	-	Nardostachys grandiflora
Family	-	Valerianaceae
Part used	-	Root
Taste	-	Kaarpu
Actions	-	Antispasmodic, Expectorant

bghJf;Fzk;

“Fl;l"; rpye;jptplk; nfhug[uhz Ruk;
cl;oz';fhy; ngjp fz;nzha; xl;oUky; - brhl;ouj;j
gpj;jkpiug; ngFk; bgU';nfhiu vd;Wiuf;F";
Rj;j rlhkh";rpiy brhy;.”

- Fzghlk; _ypif tFg;g[gf;fk; 417

5. SIRUTHEKKU (rpWnjf;F)

Botanical Name	-	Clerodendrum Serratum
Family	-	Verbenaceae
Part used	-	Root
Taste	-	Kaippu, Thuvarppu
Actions	-	Sedative, Febrifuge, Antiallergic, Expectorant

bghJf;Fzk;

“fz;Lghu';fpbaD"; rpWnjf; Fz;nly;
fhby';nf gpj;jbk';nf fge;jhbd';nf
bjhz;Lbjhl;Lj; bjhlh;Rthr fhrbk';nf
Rubk';nf btwpba';nf bjhdpnehba';nf
kpz;Lg[hp gPerePh;f; nfhit ba';nf
btsp ePUz; zPbu';nf tpww;fhby';nf
mz;Lglhr; rPjRu'; fLg;g[bk';nf
aHiyaf nehba';nf aiuFtPnu

Fzghlk; _ypif tFg;g[gf;fk; 216

6. INDHUPPU (,e;Jg;g[)

Chemical name - Sodium Chloride Impura

Actions - Laxative, Carminative, Stomachic

bghJf;Fzk;

“brd;dpf; fz;zh gw;W]h; brtpft[s;fz; lk;gfneha;
re;epahr'; fhre; jhfkpiug; - g[d;dpuj;j
_y"; rpye;jpesp _ofe["; R{ijty;yp
R{y"; rpija[kpe;jhw; brhy;.”

Fzghlk; jhJ rPt tFg;g[gf;fk; 277

MEDICINE - II

KUNGUMAPOO NASIYUM

Ingredients

1. Sarkarai - 15gms
2. Kugumapoo - 15 gms
3. Jhaathikaai - 15 gms
4. Maadhulam Poo - 15 gms
5. Nei - 300 ml

PREPARATION:

The herbal ingredients are ground into karkam form.Then it is added with ghee in a vessel and heated on low fire till it boils. It is filtered and preserved in a dry container.

Method of use:

2drops instilled in both nostrils twice daily.

Indication:

Sinusitis

1. SARKARAI (rh;f;fiu)

Botanical name - Saccharum officinarum
Family - Graminaceae
Taste - Inippu
Actions - Anti-septic, Demulcent

bghJf;Fzk;

MEDICINE- NO-II

KUNGUMAPOO NASIYUM

Sarkkarai

Kungumapoo

Jhaathikkaai

Maadhulampoo

Nei

Kungumapoo Nasiyum

“rPdpr; rh;f;fiuf;Fj; jPuhj td;ruK';

Tdpf;Fk; thjj;jpd; Tl;Lwt[k; - Vdpw;Fk;
the;jp bahLfpUkp khwhj tpf;fYnk
nghe;jpiria tpl;Lg; g[uz;L”

- Fzghlk; _ypif tFg;g[gf;fk; 238

2. KUNGUMAPOO (F';Fkg;;g{[)

Botanical name	-	Crocus sativus
Family	-	Iridaceae
Part used	-	dried stigma
Taste	-	Kaippu
Actions	-	Stomachic, Anodyne, Antispasmodic

bghJf;Fzk;

“F';Fkg;;g{[itf;fz;lhy; TWbfhz;il gPdrneha;
j';Fbrtpj; njhl";rynjhlk; - bgh';F
kJunjhle; bjhiya[k; khjh; fUg;g
cjpu njhl fsWk; XJ”

Fzghlk; _ypif tFg;g[gf;fk; 351

3. JHAATHIKAAI (rhjpf;fha;)

Botanical name	-	Myristica Fragrans
Family	-	Myristicaceae
Part used	-	Fruit
Taste	-	Thuvarppu, Kaarppu
Actions	-	Carminative, Narcotic, Aromatic, Tonic

bghJf;Fzk;

“jhJel;lk; ngjprUthrp a";rpu neha;
XJ Rthr';fhrk; cl;fpufzp - ntnjh
oyf;fha; tUk;gpzp nghk; Vw;wkay; gpj;j';
Fyf;fh aUe;Jth;f;Ff; TW”

Fzghlk; _ypif tFg;g[gf;fk; 431

4. MAADHULAM POO (khJsk; g[{)

Botanical name	-	Punica Granatum
Family	-	Punicaceae
Part used	-	Flower
Taste	-	Thuvarppu
Action	-	Astringent, Stomachic

bghJf;Fzk;

“the;jpgpj;j njhlbkhL khwhf; fL;g;gdy";
nrh;e;J epd;w _yuj;je; jPh;f;F';fhz; - khe;jsph;f;if
khnj! apuj;jg[\;o ty;ygyd; cz;lhFk;
g[{jyj;Js; khJisapd;g[”

Fzghlk; _ypif tFg;g[gf;fk; 750

5. NEI (bea;)

bghJf;Fzk;

“jhfKHiy Rl;fk; the;jp gpj;jk; tha[gpu
nkfk; tap w;bwhpt[tpf;fyHy; - khfhr
Fd;kk; twl;rp Flw;g[ul;l y!;jpRl;f";
brhd;_yk; nghf;Fepiwj; Jg;g[”

Fzghlk; jhJrPt tFg;g[- gf;fk; 530

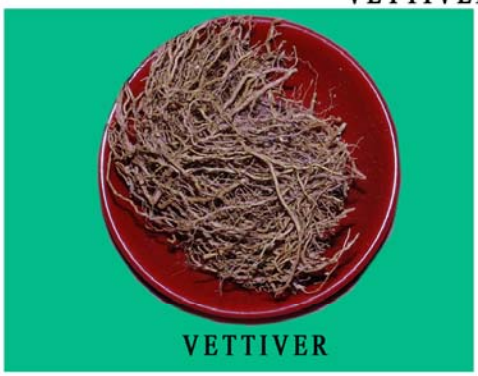
MEDICINE – III
VETTIVER THYLUM

Ingredients :

1. Vettiver	- 350 gms
2. Athimadhuram	- 17.5 gms
3. Karunjeeragam	- 17.5 gms
4. Devadharam	- 17.5 gms
6. Nallennai	- 1500 ml.

MEDICINE- NO-III

VETTIVER THYLUM

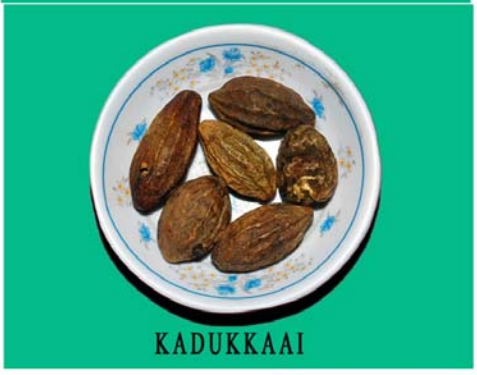


VETTIVER

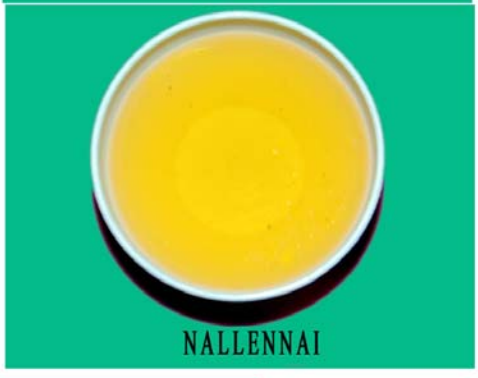
ATHIMADHURAM

KARUNJEERAGAM

DEVADHAARAM



KADUKKAAI



NALLENNAI

VETTIVER THYLUM

PREPARATION

Vettiver is ground into powder form and eleven litres of water is added and boiled until it gets one eighth of the total volume, and filter it.The other ingredients are ground into karkam form and mixed with above vettiver decoction and nallennai. Then heated it on low fire and filtered.

Method of Use

30 ml given for head bath,to be taken twice a week.

Indications :

Sinusitis, Headache, Leucoderma, Eyes burning, Ear pain, Burning sensation& pain in the body.

1. VETTIVER (btl;onth;)

Botanical name - Vettiveria Zizanoides

bghJf;Fzk;

“gpj;jtp jhfk; rrpfh kpy';fiwg; gpj;jkdw;
wj;jpL Fl;l"; rpuneha; fsko jhJel;l
kj;jk dw;g[z; ldg;g[z;td; _h;r;ir thptpHpneha;
tpj;jpu nkfj;jpd; fl;oa[k; nghk; btl;o nthpDf;nf”

Fzghlk; _ypif tFg;g[gf;fk; 366

2. ATHIMADHURAM (mjpkJuk;)

Botanical name - Glycyrrhiza Glabra

bghJf;Fzk;

“jpj;jpf;Fk; mjpkJuf; Fzj;ij baLj;J iuf;fpy;
rpukaf;f"; Rujhfe; jphpnjhl';fs;
gpj;j";rj; jpf;FkpJ Fzkh kJujPgdkhe;
jhJt[l;ozKe; jtph;f;Fk; tpHpf;fpjkhk;”

Fzghlk; _ypif tFg;g[gf;fk; 14

3. KARUNJEERAGAM (fU";rPufk;)

Botanical name - Nigella Sativa

Part used - Seed

bghJf;Fzk;

fU";rPufj; jhd; fug;ghbdhL g[z;Qk;
tU";rpuha;g; gPerK khw;Wk; - mUe;jpdhy;
fha;r;ry; jiytypa['; fz;typa[k; nghKyfpy;
tha;r;r kUe;bjdntit"

Fzghlk; _ypif tFg;g[gf;fk; 463

4. DEVADHARAM (njtjhuk;)

Botanical name - Cedrus deodara

bghJf;Fzk;;

"njtjh uf;Fze;jhd; nrh;e;Jtsh; gPdprj;ijf;
fhtfj;jp nyhl;L'; gynt - khtyth;
brhy;Yk;g[uhz RubkhL ePnuw;wj;ij
bty;Y kdw;wzpf;F bka;"

Fzghlk; _ypif tFg;g[gf;fk; **547**

5. KADUKKAI (fLf;fha;)

Botanical name - Terminalia chebula

bghJf;Fzk;

fLf;fha;e; jha['; fUjpbyhd;bwd; whYk;
fLf;fha; jha;f;fjpf'; fhz;eP - fLf;fha;neha;
xl;o a[lw;nww;Wk; cw;wtd;id nahRitfs;
Cl;oa[lw; nww;W Kte;J

Fzghlk; _ypif tFg;g[gf;fk; 207

6. NALLENNAI (ey;byz;bza;)

Botanical name - Sesamum Indicum

bghJf;Fzk;

"g[j;jpaeadf; Fsph;r;rp g[{hpg;g[bka;g;g[sf";
rj;Jt';fe;jp jdpapsik - bkj;jt[z;lh';
fz;nzha; brtpneha; fghytHy; fhrneha;
g[z;nzha;ngh bkz;bza;ahw; nghw;W"

Fzghlk; _ypif tFg;g[gf;fk; 16

✶✶✶✶✶

II. Bio-chemical Analysis

ANNEXURE – II

BIOCHEMICAL ANALYSIS OF PEENISA CHOORNAM

Sl. No	Experiment	Observation	Inference
1.	**APPEARANCE OF THE SAMPLE**	Mild Green in colour	-
2.	**SOLUBILITY** a. A little of the sample is shaken well with distilled water	Solubility	Completely soluble
	b. A little of the sample is shaken well with Con. HCL/Con.H_2SO_4/Con.HNO_3	Solubility	Completely soluble
3.	**ACTION OF HEAT** A small amount of the sample is taken in a dry test tube and heated gently at first and then strongly	No Characteristic Changes	Absence of Carbonate, Nitrate
4.	**FLAME TEST** A small amount of the sample is made in to paste with con.HCL in a watch glass and introduced into the non luminous part of the Bunsen flame	Yellow Colour flame obtained	Presence of Sodium
5.	**ASH TEST** A filter paper is soaked into a mixture of sample and cobalt nitrate solution and introduced to the Bunsen flame and ignited.	Absence of light blue and brown colour flame	Absence of Aluminium and copper

PREPARATION OF EXTRACT

2gm of Peenisa Choornam is mixed with 5gm sodium carbonate in a 100ml of clean beaker and added with 20ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered.

Sl. No	Experiment	Observation	Inference
I.	**TEST FOR ACID RADICALS**		
1. a	**TEST FOR SULPHATE** 2ml of the above prepared extract is taken in a test tube. To this add 2ml of 4% Ammonium oxalate solution.	Cloudy appearance is obtained	Presence of Sulphate is confirmed
b	2ml of Sodium carbonate extract is added with 2ml of dilute HCL until the effervescence ceases off. Then 2ml of Barium chloride solution is added.	A white precipitate insoluble in con. HCL is obtained	Presence of Sulphate is confirmed
2.	**TEST FOR CHLORIDE** 2ml of Sodium Carbonate extract is added with dilute Nitric acid till the effervescence ceases. Then 2ml of Silver Nitrate solution is added	Cloudy white precipitate completely soluble in excess of ammonium hydroxide solution is obtained	Presence of Chloride is confirmed
3.	**TEST FOR PHOSPHATE** 2ml of the extract is treated with 2ml of Ammonium Molybdate solution and 2ml of con.Nitric acid.	Presence of yellow precipitate	Presence of Phosphate is confirmed
4.	**TEST FOR CARBONATE** 2ml of the extract is treated with 2ml of Magnesium sulphate solution	Absence of white precipitate	Absence of Carbonate
5.	**TEST FOR SULPHIDE** 1gm of the substance is treated with 2ml of con. Hydrochloric acid	Absence of rotten egg smelling gas	Absence of Sulphide
6.	**TEST FOR NITRATE :** 1gm of the substance is heated with copper turnings and concentrated Sulphuric acid and viewed the test tube vertically down.	Absence of reddish brown gas	Absence of Nitrate

7. a.	**TEST FOR FLUORIDE AND OXALATE :** 2ml of the extract is added with 2ml of dilute Acetic acid and 2ml of calcium chloride solution and heated.	Absence of white precipitate	Absence of Fluoride
b	5 drops of clear solution is added with 2ml of dilute Sulphuric acid and slightly warmed. To this 1ml of dilute Potassium permanganate solution is added	No characteristic colour change	Absence of Oxalate
8	**TEST FOR NITRITE** 3 drops of the extract is placed on filter papers. On that, 2 drops of Acetic acid and 2 drops of Benzidine solution is placed	Absence of yellowish red colour	Absence of Nitrite
9	**TEST FOR BORATE** 2 pinches of the substance is made into paste by using Sulphuric acid and Alcohol (95%) and introduced into the blue flame	Green tinged flame not obtained	Absence of Borate
II	**TEST FOR BASIC RADICALS**		
10	**TEST OF LEAD** 2ml of the extract is added with 2ml of Potassium Iodide solution	Absence of yellow precipitate	Absence of Lead
11 a.	**TEST FOR COPPER** One pinch of substance is made into paste with con.Hydrochloric acid in a watch glass and introduced into the non luminous part of the flame.	Bluish green colour is not obtained	Absence of Copper
b.	2ml of the extract is added with excess of Ammonia solution	Absence of white precipitate	Absence of Copper
12	**TEST FOR ALUMINIUM :** To the 2ml of the extract, Sodium hydroxide solution is added in drops to excess.	Absence of white precipitate	Absence of Aluminium
13. a.	**TEST FOR IRON :** To the 2ml of extract, 2ml of Ammonium thio cyanate solution is added	Blood red colour is not obtained	Absence of Ferric iron
b.	To the 2ml of extract, 2ml of Ammonium thiocyanate solution and 2ml of concentrated Nitric acid is added.	Blood red colour is not obtained	Absence of ferrous iron
14.	**TEST FOR ZINC** To the 2ml of extract, Sodium hydroxide solution is added in drops to excess.	Absence of white precipitate	Absence of Zinc

15.	**TEST FOR CALCIUM** 2ml of the extract is added with 2ml of 4% Ammonium Oxalate solution	White precipitate obtained	Presence of Calcium
16.	**TEST FOR MAGNESIUM** To 2ml of extract, Sodium hydroxide solution is added in drops to excess.	White precipitate soluble in Sodium hydroxide solutions	Presence of Magnesium
17.	**TEST FOR AMMONIUM** To 2ml of extract, few ml of Nessler's reagent and excess of Sodium hydroxide solution are added.	Reddish brown precipitate is not obtained.	Absence of Ammonium
18.	**TEST FOR POTASSIUM** A pinch of substance is treated with 2ml of Sodium nitrite solution and then treated with 2ml of Cobalt nitrate in 30% glacial Acetic acid.	Yellow colour precipitate obtained	Presence of Potassium.
19.	**TEST FOR SODIUM** 2 pinches of the substance is made into paste by using Hydrochloric acid and introduced into the blue flame	Yellow colour flame obtained	Presence of Sodium
20.	**TEST FOR MERCURY** : 2ml of the extract is treated with 2ml of Sodium hydroxide solution	Yellow precipitate is not obtained	Absence of Mercury
21.	**TEST FOR ARSENIC** 2ml of extract is treated with 2ml of Silver nitrate solution	Yellow precipitate is not obtained	Absence of Arsenic
III	**MISCELLANEOUS**		
22.	**TEST FOR STARCH** 2ml of extract is treated with weak Iodine solution	Blue or violet colour is not obtained.	Absence of Starch
23.	**TEST FOR REDUCING SUGAR :** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boiled for 2 minutes. The colour changes are noted.	Green colour is obtained	Presence of reducing sugar.
24. a.	**TEST FOR ALKALOIDS** 2ml of the extract is treated with 2ml of Potassium Iodide solution	Yellow colour change is not observed .	Absence of Alkaloids
b.	2ml of extract is treated with 2ml of Picric acid	Yellow colour change is not	Absence of Alkaloids

		observed .	

c.	2ml of the extract is treated with 2ml of Phosphotungstic acid	Yellow colour change is not observed	Absence of Alkaloids
25.	**TEST FOR TANNIC ACID** 2ml of the extract is treated with 2ml of Ferric chloride solution.	Brown colour precipitate is formed	Presence of Tannic acid
26.	**TEST FOR UNSATURATED COMPOUND** To 2ml of the extract, 2ml of Potassium Permanganate solution is added.	No colour changes	Absence of Unsaturated Compound
27.	**TEST FOR AMINO ACID** 2 drops of the extract is placed on a filter paper and dried well. After drying 1% Ninhydrine is sprayed over the same and dried well.	Violet colour change is not observed	Absence of Amino Acid
28.	**TEST FOR ALBUMIN** 2ml of the extract is added with 2ml of Esboch's reagent	Yellow precipitate is not obtained	Absence of Albumin
29.	**TEST FOR TYPE OF COMPOUND** 2ml of the extract is treated with 2ml of ferric chloride solution	Red colour changes is not observed.	Absence of Aliphatic, Antipyrine, Amino acid

RESULTS

The given sample contains

I.	ACID RADICALS	:	Sulphate,Chloride, Phosphate,
II.	BASIC RADICALS	:	Calcium, Magnesium, Potassium, Sodium
III.	MISCELLANEOUS	:	Reducing Sugar, Tannic acid

BIOCHEMICAL ANALYSIS OF KUNGUMAPOO NASIYUM

Sl. No	Experiment	Observation	Inference
1.	**APPEARANCE OF THE SAMPLE**	Brown in colour	-
2.	**SOLUBILITY** a. A little of the sample is shaken well with distilled water	Solubility	Sparingly soluble
	b. A little of the sample is shaken well with Con. HCL/Con. H_2SO_4, Con.HNO_3	Solubility	Sparingly soluble
3.	**ACTION OF HEAT** A small amount of the sample is taken in a dry test tube and heated gently at first and then strongly	No Characteristic Changes	Absence of Carbonate, Nitrate
4.	**FLAME TEST** A small amount of the sample is made in to paste with con.HCL in a watch glass and introduced into the non luminous part of the Bunsen flame	Absence of characteristic Colour flame	Absence of Copper Sodium and Calcium
5.	**ASH TEST** A filter paper is soaked into a mixture of sample and cobalt nitrate solution and introduced to the Bunsen flame and ignited.	Absence of light blue and brown colour flame	Absence of Aluminium and copper

PREPARATION OF EXTRACT

2gm of "**Kungumapoo Nasiyum**" is mixed with 5gm sodium carbonate in a 100ml of clean beaker and added with 20ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered.

Sl. No.	Experiment	Observation	Inference
I.	**TEST FOR ACID RADICALS**		
1.	**TEST FOR SULPHATE**		
a	2ml of the above prepared extract is taken in a test tube. To this add 2ml of 4% Ammonium oxalate solution.	Cloudy appearance is obtained	Presence of Sulphate is confirmed
b	2ml of Sodium carbonate extract is added with 2ml of dilute Hydrochloric acid until the effervescence ceases off. Then 2ml of Barium chloride solution is added.	A white precipitate insoluble in con. HCl is obtained	Presence of Sulphate is confirmed
2.	**TEST FOR CHLORIDE** 2ml of Sodium Carbonate extract is added with dilute Nitric acid till the effervescence ceases. Then 2ml of Silver Nitrate solution is added	Cloudy white precipitate is not obtained	Absence of Chloride
3.	**TEST FOR PHOSPHATE** 2ml of the extract is treated with 2ml of Ammonium Molybdate solution and 2ml of con.Nitric acid.	Presence of yellow precipitate	Presence of Phosphate is confirmed
4.	**TEST FOR CARBONATE** 2ml of the extract is treated with 2ml of Magnesium sulphate solution	Absence of white precipitate	Absence of Carbonate
5.	**TEST FOR SULPHIDE** 1gm of the substance is treated with 2ml of con. Hydrochloric acid	Absence of rotten egg smelling gas	Absence of Sulphide
6.	**TEST FOR NITRATE** 1gm of the substance is heated with copper turnings and con. Sulphuric acid and viewed the test tube vertically down.	Absence of reddish brown gas	Absence of Nitrate

7. a.	**TEST FOR FLUORIDE AND OXALATE** 2ml of the extract is added with 2ml of dilute Acetic acid and 2ml of calcium chloride solution and heated.	Absence of white precipitate	Absence of Fluoride
b	5 drops of clear solution is added with 2ml of dilute Sulphuric acid and slightly warmed. To this 1ml of dilute Potassium permanganate solution is added	No characteristic colour change	Absence of Oxalate
8	**TEST FOR NITRITE** 3 drops of the extract is placed on filter papers. On that, 2 drops of Acetic acid and 2 drops of Benzidine solution is placed	Absence of yellowish red colour	Absence of Nitrite
9	**TEST FOR BORATE** 2 pinches of the substance is made into paste by using Sulphuric acid and Alcohol (95%) and introduced into the blue flame	Green tinged flame not obtained	Absence of Borate
II	**TEST FOR BASIC RADICALS**		
10	**TEST OF LEAD** 2ml of the extract is added with 2ml of Potassium Iodide solution	Absence of yellow precipitate	Absence of Lead
11 a.	**TEST FOR COPPER** One pinch of substance is made into paste with con.Hydrochloric acid in a watch glass and introduced into the non luminous part of the flame.	Bluish green colour is not obtained	Absence of Copper
b.	2ml of the extract is added with excess of Ammonia solution	Absence of white precipitate	Absence of Copper
12	**TEST FOR ALUMINIUM** To the 2ml of the extract, Sodium hydroxide solution is added in drops to excess.	Absence of white precipitate	Absence of Aluminium
13. a.	**TEST FOR IRON** To the 2ml of extract, 2ml of Ammonium thio cyanate solution is added	Blood red colour is not obtained	Absence of Ferric iron
b.	To the 2ml of extract,2ml of Ammonium thiocyanate solution and 2ml of concentrated Nitric acid is added.	Blood red colour is not obtained	Absence of ferrous iron

14.	**TEST FOR ZINC** To the 2ml of extract, Sodium hydroxide solution is added in drops to excess.	Absence of white precipitate	Absence of Zinc
15.	**TEST FOR CALCIUM** 2ml of the extract is added with 2ml of 4% Ammonium Oxalate solution	White precipitate is not obtained	Absence of Calcium
16.	**TEST FOR MAGNESIUM** To 2ml of extract, Sodium hydroxide solution is added in drops to excess.	White precipitate is not obtained	Absence of Magnesium
17.	**TEST FOR AMMONIUM** To 2ml of extract, few ml of Nessler's reagent and excess of Sodium hydroxide solution are added.	Reddish brown precipitate is not obtained.	Absence of Ammonium
18.	**TEST FOR POTASSIUM** A pinch of substance is treated with 2ml of Sodium nitrite solution and then treated with 2ml of Cobalt nitrate in 30% glacial Acetic acid.	Yellow colour precipitate is not obtained	Absence of Potassium.
19.	**TEST FOR SODIUM** 2 pinches of the substance is made into paste by using Hydrochloric acid and introduced into the blue flame	Yellow colour flame is not obtained	Absence of Sodium
20.	**TEST FOR MERCURY** 2ml of the extract is treated with 2ml of Sodium hydroxide solution	Yellow precipitate is not obtained	Absence of Mercury
21.	**TEST FOR ARSENIC** 2ml of extract is treated with 2ml of Silver nitrate solution	Yellow precipitate is not obtained	Absence of Arsenic
	MISCELLANEOUS		
22.	**TEST FOR STARCH** 2ml of extract is treated with weak Iodine solution	Blue colour is obtained.	Presence of Starch
23.	**TEST FOR REDUCING SUGAR** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boiled for 2 minutes. The colour changes are noted.	Green colour is obtained	Presence of reducing sugar.

24. a.	**TEST FOR ALKALOIDS** 2ml of the extract is treated with 2ml of Potassium Iodide solution	Yellow colour change is not observed .	Absence of Alkaloids
b.	2ml of extract is treated with 2ml of Picric acid	Yellow colour change is not observed .	Absence of Alkaloids
c.	2ml of the extract is treated with 2ml of Phosphotungstic acid	Yellow colour change is not observed	Absence of Alkaloids
25.	**TEST FOR TANNIC ACID** 2ml of the extract is treated with 2ml of Ferric chloride solution.	Brown colour precipitate is formed	Presence of Tannic acid
26.	**TEST FOR UNSATURATED COMPOUND** To 2ml of the extract, 2ml of Potassium Permanganate solution is added.	No colour changes	Absence of Unsaturated Compound
27.	**TEST FOR AMINO ACID** 2 drops of the extract is placed on a filter paper and dried well. After drying 1% Ninhydrine is sprayed over the same and dried well.	Violet colour change is not observed	Absence of Amino Acid
28.	**TEST FOR ALBUMIN** 2ml of the extract is added with 2ml of Esboch's reagent	Yellow precipitate is not obtained	Absence of Albumin
29.	**TEST FOR TYPE OF COMPOUND** 2ml of the extract is treated with 2ml of ferric chloride solution	Red colour changes is not observed.	Absence of Aliphatic, Antipyrine, Amino acid

RESULTS

The given sample contains

I. Acid Radicals – Sulphate, Phosphate

II. Miscellaneous – Starch, Reducing Sugar, Tannic acid.

III. Qualitative & Quantitative Analysis

SSI Reg. No. : 330232701 Dt. 23-02-85
E-mail : test@mettexlab.com
Phone : 22323163, 42179490
Fax : 42179491

METTEX LABORATORIES OF INDIA

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

ISO / IEC 17025 : 2005, ACCREDITATED BY NABL, DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA

TEST REPORT

ISSUED TO:

M.D(S), III Year
Branch I, Pothu Maruthuvam,
Govt. Siddha Medical college,
Chennai – 600 106

T.C Date : August 11, 2007

T.C No : MLI/2007/**3903**

Party's Ref : Letter Dated on 25-07-07

Date of Receipt : 25-07-07

Test Method : APHA 21st Edition & IP Methods,

Test Completed on : 10-08-07

Lab No : G-5119

Sample Description: Peenisa Choornam

Equipment used: Atomic Absorption Spectrometer (AAS) – Make: Varian, Australia,

Sl.No	Parameter	Results (%)
01.	Loss of drying @ 105°C	1.41
02.	Acid Insoluble Ash	0.12
03.	Water solubility	29.34
04.	Alcohol solubility	13.25
Organic Analysis: Qualitative		
05.	Alcohol	Absent
06.	Quinone	Absent
07.	Steroid	Absent
08.	Flavanoids	Absent
09.	Triterperoids	Absent
Inorganic Analysis: Quantitative		
10.	Calcium as Ca	0.55
11.	Magnesium as Mg	0.11
12.	Sodium as Na	2.40
13.	Potassium as K	0.35
14.	Phosphorus as P	0.15
15.	Iron as Fe	0.19

METTEX LABORATORIES OF INDIA CH-32

For Mettex Laboratories of India

(G. MADHANAGOPAL)
Manager Enviro

Recognised & Approved Laboratory by AAI, NLC, RITES, BHEL, IBR, LLYODS, DNV, BV & DEFENCE Establishments.

*Note :- This report relates only to the particular sample submitted for test. * Any correction not attested shall invalidate this report. This report shall not be reproduced except in full without our written approval. * Samples are not drawn by us unless otherwise stated. Retention period of tested samples one month only unless otherwise specified. # Test does not come under the scope of accreditation.*

IV. pH of Nasiyum

SSI Reg. No. : 330232701 Dt. 23-02-85
E-mail : test@mettexlab.com

Phone : 22323163, 42179490
Fax : 42179491

METTEX LABORATORIES OF INDIA

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

ISO / IEC 17025 : 2005, ACCREDITATED BY NABL, DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA

TEST REPORT

ISSUED TO:

M.D(S), III Year
Branch I, Pothu Maruthuvam,
Govt. Siddha Medical college,
Chennai – 600 106

T.C Date : Sept 03, 2007

T.C No : MLI/2007/**10389**

Party's Ref : Letter Dated on 03.09-07

Date of Receipt : 03.09-07

Test Completed on : 03.09-07

Lab No : 15170

Sample Description: Kungumapoo Nasiyum

Sl.No	Parameter	Results
01.	pH @ 25°C	4.05

For Mettex Laboratories of India

(G. MADHANAGOPAL)
Manager Enviro

V. Microbiological Study

ANNEXURE – V

MICROBIOLOGICAL STUDY

The extract of the **Peenisa Choornam** and **Kungumapoo Nasiyum** were tested with the following micro organisms.

1. Staphylo coccus aureus
2. Escherichia coli
3. Klebsiella
4. Proteus
5. Pseudomonas

Procedure

The tube dilution method was used as homogeneous dispersion of the drug and it is more effective to test the antimicrobial activity of the drug. Dilution method is used in the preliminary screening of the antimicrobial activity.

To 10ml of nutrient broth culture 0.5ml of the extract was added and the tubes were incubated at 37^{o}C overnight. The next day the tubes were examined for turbidity and subcultures were made on Nutrient Agar Plates. Control tubes with out drug were also incubated.

The culture plates were incubated overnight at 37^{o}C and the next day the readings were taken. The reading were as follows.

S.No.	Micro Organisms	Peenisa Choornam	Kungumapoo Nasiyum
1.	Staphylo coccus aureus	Highly sensitive	Mild sensitive
2.	Escherichia coli	Non sensitive	Highly sensitive
3.	Klebsiella	Highly Sensitive	Non sensitive
4.	Proteus	Non sensitive	Non sensitive
5.	Pseudomonas	Non sensitive	Non sensitive

VI. Pharmacological Studies

ANNEXURE - VI

PHARMACOLOGICAL STUDY

TOXICOLOGICAL EVALUATION OF PEENISA CHOORNAM AND KUNGUMAPOO NASIYUM EXTRACT

ACUTE TOXICITY

Acute toxicity was carried out in the Department of Pharmacology, Periyar College of Pharamaceutical sciences, Trichy.

The study was performed after getting approval from **Institutional Animal Ethical Committee (IAEC).** The principles of laboratory animal care were also followed in this study. **LD 50 of Peenisa Choornam and Kungumapoo Nasiyum extract was done as per OECD** (Organisation of Economical Co-operation and Development)

Albino rats of either sex (wt. 150 – 180 gm) were used for acute toxicity studies. The animals were supplied by the Periyar animal facility centre. They were fed at libitum with standard feed and had free access to water. They were also maintained under standard conditions of humidity, temperature and 12 hr. light/darkness cycle. The animals were acclimatized for a week before the commencement of the study.

Result

The trial medicines “Peenisa Choornam and Kungumapoo Nasiyum extract” did not exhibit any significant toxicity. **The trial medicines Peenisa Choornam and Kungumapoo Nasiyum extract fall under class 4. (LD 50 > 2000mg/kg) The animals did not show any signs of acute toxicity and behavioral changes.**

ANTI INFLAMMATORY ACTIVITY
CARRAGEENIN INDUCED HIND PAW EDEMA

Albino rats of either sex weighing 150-200gms were divided into six groups of six animals each. The dosage of the drugs administered to the different groups were as follows. Group 1- Control, Group 2 – Peenisa Choornam & Kungumapoo Nasiyum (100 mg/Kg & 200 mg/kg) and Group 3 – Indomethacin (10mg/kg). All the drugs were administered orally.

After an hour of the administration of the drugs, dose 0.1 ml of 1% w/v carrageenin solution in normal saline was injected into the subplantar tissue of the left hind paw of the rat and right hind paw served as the control. The paw volume of the rats were measured in the digital plethysmograph (Ugo basile, Italy) at the end of 0 min., 60 min., 120 min., 180 min., 240 min., 360 min., and 480 min. The % increase in paw edema of the treated group was compared with that of the control and the inhibitory effect of the drugs were studied. The relative potency of the drugs under investigations was calculated based upon the percentage inhibition of the inflammation.

Edema which develops after carrageenin inflammation is a biphasic event[2]. The initial phase is attributed to the release of histamine and serotonin. The edema maintained between the first and the second phase is due to kinin like substances[3]. The second phase is said to be promoted by prostaglandin like substances. It has been reported that the second phase of edema is sensitive to drugs like hydrocortisone, phenylbutazone and indomethacin[2].

Percentage inhibition :

$$\frac{\text{Control (\% increase in paw Volume in } 3^{rd} \text{ hour}) - \text{Test (\% increase in paw Volume in } 3^{rd} \text{ hour})}{\text{Control (\% increase in paw volume in } 3^{rd} \text{ hour})} \times 100$$

Reference

1. Carrageenin induced hind paw edema (winter et al 1962), vinegaretal 1969.

2. Winter, C.A., Risely, E.A. and Nuss, G.W (1962), Proceedings of the society for Experimental Biology and Medicine.

3. Vinegar, R., Schreiber, W. and Hygo, R. (1969) Journal of Pharmacology and Experimental Therapeutics.

Anti inflammatory activity of PEENISA CHOORNAM & KUNGUMAPOO NASIYUM against Carragenin Induced Paw Edema in Albino Rats

TABLE NO :1

Treatment	% increase in paw volume Mean ± S.E. (n=6) Post insult of assay in minutes					% inhibition in paw volume
	0	60	120	180	240	
Control (0.5 ml/kg)	39.51 ± 3.16	70.53 ± 6.8	95.61 ± 9.1	108.21 ± 9.24	115.15 ± 10.21	-
Peenisa Choornam (100mg/kg)	33.83 ± 3.1	45.68 ± 4.2	56.25 ± 5.2	70.16* ± 6.2	76.82* ± 7.1	35.16
Peenisa Choornam (200mg/kg)	31.85 ± 2.7	42.59 ± 3.8	50.71 ± 4.6	63.95* ± 5.8	68.16* ± 6.2	40.90
Kungumapoo Nasiyum (100mg/kg	34.54 ± 3.1	47.13 ± 3.7	59.74 ± 5.1	69.28 ± 6.3	76.25 ± 7.2	35.97
Kungumapoo Nasiyum (200mg/kg	32.37 ± 2.9	43.16 ± 3.9	56.46 ± 5.1	62.84 ± 6.1	70.93 ± 6.5	41.92
Indomethacin (10mg/kg)	29.47 ± 2.2	35.2 ± 2.9	42.3 ± 3.9	56.29* ± 4.7	60.49* ± 5.2	47.98

* $P < 0.001$ Vs Control by students 't' test.

DISCUSSION

Both the drugs produced significant anti inflammatory activity on carrageenin induced inflammation on hind paw of albino rats. The relative efficacy of both the drugs were almost similar as noticed with the percentage inhibition, but were less when compared with the standard.

ANALGESIC ACTIVITY

HOT PLATE METHOD

The Glassman's method was employed for the assessment of analgesic activity. Albino Swiss mice were divided into groups of six animals each (20-25 grams). They were fasted initially for 16 hours. Group 1 served as control (Normal saline 2 ml/kg), Group 2 & 3 were administered Peenisa Choornam & Kungumapoo Nasiyum extract (100mg/kg & 200mg/kg) by oral route respectively. Group 4 served as standard (Pentazocine 5mg/kg) by intraperitoneal route. The time of reaction to pain stimulus of the mice placed on the hot plate heated at 55 ± 0.5^0C was recorded at 30 min., 60 min., 120 min., and 180 min., after administration of the test drug. The increase in reaction time against control was calculated.

Reference :

Eddy NB, Leimbach D. Systemic analgesics II. Diethyl buttenyl and diethienyl butyl amines, J. Pharmacol Exp Ther 1953; 107: 385-93

Analgesic Effect of PEENISA CHOORNAM & KUNGUMAPOO NASIYUM EXTRACT by Hot Plate Method

TABLE NO.2

Treatment	Reaction time in min				
	0	30	60	120	180
Control	45 ± 0.75	4.7 ± 0.62	4.5 ± 0.34	4.3 ± 0.82	4.6 ± 0.48
Peenisa Choornam 100mg/kg	4.3 ± 0.51	4.7 ± 0.42	5.6 ± 0.47	6.5 ± 0.27	6.9 ± 0.74
Peenisa Choornam (200mg/kg	4.5 ± 0.45	5.8 ± 0.25	7.4 ± 0.62	8.3 ± 0.53*	9.5 ±0.41*
Kungumapoo Nasiyum Extract 100mg/kg	4.2 ± 0.71	4.9 ± 0.35	5.7 ± 0.24	6.3 ± 0.15	6.5 ± 0.37
Kungumapoo Nasiyum extract (200mg/kg	4.4 ± 0.37	6.3 ± 0.35	8.6 ± 0.36	9.6 ± 0.47*	10.0±0.31*
Pentazocine (5mg/kg)	4.3 ± 0.46	6.6± 0.57	8.6± 0.37	10.0± 0.43*	10.2 ± 0.36

Data are expressed in mean ± S.E, n=6

P< 0.01 Vs control by students ‘t’ test.

Discussion

Both the drugs produced significant analgesic activity when compared with the control. The analgesic activity was also comparable with that of the standard.

VII. Bio-statistic Analysis

ANNEXURE VII

STATISTICAL ANALYSIS OF CLINICAL STUDY (BIO STATISTICS)

Parameters for analysis

I. Subjective parameters (Clinical features)

- Nasal discharge
- Nasal congestion
- Headache

II. Objective parameter (Laboratory Investigation)

- Absolute Eosinophil count

The parameters observed were analysed before and after treatment in 20 number of patients.

Methods of analysis

I. P- value of the subjective parameters was analysed and explained in Table-1

II. Paired t - test for objective parameter was done and explained in Table - 2

Results

I. Probability value of subjective parameters were

- Nasal discharge - P = 0.05
- Nasal congestion- P = 0.05
- Headache - P = 0.05

II. Paired t – test value of objective parameter was

- Absolute Eosinophil count – t value = 3.1766

TABLE – 1

STATISTICAL ANALYSIS OF SUBJECTIVE PARAMETERS OBSERVED BEFORE AND AFTER TREATMENT OF 20 (n) PATIENTS OF PITHA THALAINOKKAADU

Sl. No	Parameters	No. of patients			Percentage of relieved	Probability (p) value	Statistical Significance
		BT	AT	Relieved			
1.	Nasal discharge	20	5	15	75	0.05	Significant
2.	Nasal congestion	20	5	15	75	0.05	Significant
3.	Headache	20	4	16	80	0.05	Significant

TABLE – 2

STATISTICAL ANALYSIS OF OBJECTIVE PARAMETER OBSERVED BEFORE AND AFTER TREATMENT OF 20 (n) PATIENTS OF PITHA THALAINOKKAADU

Sl No	Parameter	Mean			Computed paired – t value	Critical value of t @ 5% d.f.	Statistical significance
		BT	AT	Diff.			
1.	Absolute Eosinophil count (cells/cmm)	446.05	370.90	75.15	3.1766	2.0930	Significant

Inference

The statistical results express that the given trial medicines for **Pitha Thalainokkaadu** is effective in curing the patients at significant level.

VIII. Case Sheet Proforma

ANNEXURE – VIII

I.P. CASE SHEET PROFORMA

"PITHA THALAINOKKAADU"

GOVT. SIDDHA MEDICAL COLLEGE AND HOSPITAL

Post Graduate Department, (Branch –I) Maruthuvam

Chennai – 600 106.

I.P. NO.	:	OCCUPATION	:
WARD NO	:	INCOME	:
BED NO.	:	NATIONALITY	:
NAME	:	RELIGION	:
AGE	:	D.O.A	:
SEX	:	D.O.D	:
ADDRESS	:	DIAGNOSIS	:

MEDICAL OFFICER'S SIGNATURE

---

1. COMPLAINTS AND DURATION :

2. HISTORY OF PRESENT ILLNESS :

3. HISTORY OF PAST ILLNESS :

4. PERSONAL HISTORY & HABITS :

5. FAMILY HISTORY :

6. GENERAL EXAMINATION

1. Consciousness :
2. Nutrition :
3. Decubitus :
4. Anaemia :
5. Jaundice :
6. Cyanosis :
7. Clubbing :
8. JVP :
9. Oedema :
10. Lymph Adenopathy :
11. Pulse Rate :
12. Heart Rate :
13. Respiratory Rate :
14. Temperature :
15. Blood Pressure :

SIDDHA ASPECT :

I. NILAM (Places)

1. Kurinchi (Hill Area) :
2. Mullai (Forest Area) :
3. Marutham (Fertile Area) :
4. Neithal (Coastal Area) :
5. Paalai (Desert Area) :

II. PARUVA KAALAM (Seasons)

1. Kaar (Aavani-Purataasi) :
2. Koothir (Iypasi-Karthigai) :
3. Munpani (Maargazhi-Thai) :
4. Pinpani(Maasi-Panguni) :
5. Illavenil (Chithirai-Vaikasi) :
6. Mudhuvenil (Aani-Aadi) :

III. YAAKAI (Udalnilai)

1. Vatham :
2. Pitham :
3. Kapham :
4. Kalappu :

IV. MUKKUNAM

1. Sathuva Gunam :
2. Rajo Gunam :

3. Thamo Gunam :

V. IYMPORIGAL/PULANGAL

1. Mei (Sensation) :
2. Vai (Taste) :
3. Kan (Vision) :
4. Mooku (Smell) :
5. Sevi (Hearing) :

VI. KANMENTHIRIYAM / KANMAVIDAYAM

1. Kai (Koduthal) :
2. Kaal (Nadathal) :
3. Vaai (Pesal) :
4. Eruvai (Kazhithal) :
5. Karuvai (Aananthithal) :

VII. MUMALAM

1. Malam :
2. Moothiram :
3. Viyarvai :

VIII. KOSANGAL

1. Annamaya Kosam (Paru Udambu) :
   (Yelu Udal Thaathukal)
2. Pranamaya Kosam (Vali Udambu) :
   (Praanan + Kanmenthiriyam)
3. Manomaya Kosam (Mana Udambu) :
   (Manam + Gnanenthiriyam)
4. Gnanamaya Kosam (Arivu Udambu) :
   (Puththi + Gnanenthiriyam)
5. Ananthamaya Kosam (Inba Udambu) :
   (Praanan + Suzhuthi)

IX. PIRA URUPUKALIN NILAI

1. Irudhayam :
2. Puppusam :
3. Eraipai :
4. Kalleeral :
5. Manneeral :
6. Siru Neeragam :
7. Siru Neerpai :
8. Moolai :
9. Karuppai :

X. UYIR THATHUKKAL

- **VATHAM**

1. Praanan :
2. Abaanan :
3. Vyanan :
4. Udhanan :
5. Samaanan :
6. Naagan :
7. Koorman :
8. Kirukaran :
9. Devadhathan :
10. Thananjayan :

- **PITHAM**
  1. Anar Pitham :
  2. Ranjaga Pitham :
  3. Saathaga Pitham :
  4. Aalosaga Pitham :
  5. Praasaga Pitham :
- **KAPHAM**
  1. Avalambagam :
  2. Klethagam :
  3. Podhagam :
  4. Tharpagam :
  5. Santhigam :

XI. UDAL THAATHUKKAL

1. Saaram :
2. Senneer :
3. Oon :
4. Kozhuppu :
5. Enbu :
6. Moolai :
7. Vinthu / Natham :

XII. ENVAGAI THERVUGAL

1. Naa :
2. Niram :
3. Mozhi :
4. Vizhi :
5. Sparisam :
6. Malam

- ❖ Niram :
- ❖ Nurai :

- Irugal :
- Illagal :

7. Moothiram
   - Neerkuri :
     - Niram :
     - Manam:
     - Edai :
     - Nurai :
     - Enjal :
   - Neikuri :
8. Naadi :

EXAMINATION OF NOSE AND PARANASAL SINUSES :-

LOCAL EXAMINATION :-

I. Inspection :

1. Nasal Mucosa :
2. Nasal Septum :
3. Nasal Polyp :
4. Puffiness of Face :

II. Palpation :

1. Frontal Region :
2. Maxillary Region :
3. Infra Orbital Region :

OTHER SYSTEMS :

1. RESPIRATORY SYSTEM

- Inspection

  Throat :

  Position of Trachea :
  Shape of The Chest :
  Type of Breathing :
- Palpation
- Percussion
- Auscultation

2. CVS

3. GI

4. CNS

5. GENITO URINARY SYSTEM

LAB INVESTIGATIONS :

I. BLOOD : TC
DC
ESR
HB
ABSOLUTE EOSINOPHIL COUNT
SUGAR (F/PP/ R)

UREA
CHOLESTEROL

II. URINE : ALBUMIN :
SUGAR :
DEPOSITS :

III. MOTION : OVA :
CYST :

IV. XRAY - PNS :

CASE SUMMARY :

FINAL DIAGNOSIS :

MEDICINE

MEDICAL ADVICE :

S. No	Clinical Features	Before Treatment	During Treatment	After Treatment
1.	Nasal discharge			
2.	Heaviness of head			
3.	Excessive salivation			
4.	Throat pain			
5.	Ear pain			
6.	Pain and tenderness in para nasal sinus region			
7.	Recurrent sneezing			
8.	Nasal congestion			
9.	Nasal irritation			
10.	Irritation & watering of eyes			
11.	Headache			
12.	Cough with expectoration			
13.	Fever			
14.	Voice- changes			
15.	Epistaxis			

GOVT. SIDDHA MEDICAL COLLEGE AND HOSPITAL

Post Graduate Department, (Branch –I) Maruthuvam

Chennai – 600 106.

DISHARGE CASE SHEET

“PITHA THALAINOKKAADU”

I.P NO.	:	OCCUPATION	:
WARD NO	:	INCOME	:
BED NO.	:	NATIONALITY	:
NAME	:	RELIGION	:
AGE	:	D.O.A	:
SEX	:	D.O.D	:
ADDRESS	:	DIAGNOSIS	:
		RESULT	:

MEDICAL OFFICER’S SIGNATURE

S. No.	Clinical Features	During Admission	During Discharge
1.	Nasal discharge		
2.	Heaviness of head		
3.	Excessive salivation		
4.	Throat pain		
5.	Ear pain		
6.	Pain and tenderness in Para nasal sinus region		
7.	Recurrent sneezing		
8.	Nasal congestion		
9.	Nasal irritation		
10.	Irritation & watering of eyes		
11.	Headache		
12.	Cough with expectoration		
13.	Fever		
14.	Voice- changes		
15.	Epistaxis		

Bibliography

BIBLIOGRAPHY

rpj;j kUj;Jt E]w;fs; :

1. a[{fp itj;jpa rpe;jhkzp - ,e;jpa kUj;Jtk; kw;Wk; nAhkpnahgjp Jiw, brd;id - 106, Kjy; gjpg;g[1998 - gf;fk;76/ 103 Kjy; 106 tiu
2. kU.k.rz;KfntY-rpj;j kUj;;Jt neha; ehly; neha; Kjdhly; jpul;L Kjy; ghfk; - jkpH;ehL rpj;j kUj;Jt thhpa btspaPL 1987-gf;fk; 86, 120, 173, 175, 248, 253, 265, 279
3. kU.k.rz;KfntY-rpj;j kUj;;Jt neha; ehly; neha; Kjdhly; jpul;L ,uz;lhk; ghfk; - jkpH;ehL rpj;j kUj;Jt thhpa btspaPL 1988-gf;fk; 503, 544, 548
4. kU.f.R.cj;jkuhad; - rpj;j kUj;Jth';fr;RUf;fk;, jkpH;ehL murpdh; gjpg;gfk; 1953 - gf;fk; 73, 75, 79, 81, 191, 197
5. mfj;jpa kfhKdpth; jpUtha; kyh;e;jUspa FUeho rh°jpuk; 235 uj;jpdehafh; rd;!; 1992 - gf;fk; 10, 37
6. mf!;jpah; 2000 Kjypuz;L ghf';fs;/ v!;.gp. bt';fluhrd;/ ru!;tjp E]yfk; _d;whk; gjpg;g[1989 - gf;fk; 32
7. mf!;jpah; fd;kfhz;lk;/ v!;.gp. uhkre;jpud; jhkiu gjpg;gfk; Kjy; gjpg;g[1995 - gf;fk; 9, 34
8. mf!;jpah; 1200 v!;.gp. uhkre;jpud; jhkiu gjpg;gfk; Kjy; gjpg;g[1999 - gf;fk; 39
9. njiuah; itj;jpa fhtpak; 1500/ v!;.gp. uhkre;jpud; jhkiu gjpg;gfk; Kjy; gjpg;g[1993 - gf;fk; 89
10. kU.jpahfuhrd; njiuah; thflk;/ gHdp jz;lha[jghzp Rthkp jpUf;nfhapy; btspaPL Kjy; gjpg;g[1975 - gf;fk; 16, 71
11. kU.mu';fuhrd;/ 4448 tpahjpfs;/ ru!;tjp E]yfk; ,uz;lhk; gjpg;g[1990 - gf;fk; 125
12. uh#itj;jpa nghjpdp Kjy; ghfk;/ v!;.gp. uhkre;jpud; jhkiu gjpg;gfk; Kjy; gjpg;g[1999 - gf;fk; 20
13. mDgt itj;jpa njt ufrpak; rPjhuhk; gpurhj; gp. uj;jpdehafh; rd;!; ,uz;lhk; gjpg;g[1991 - gf;fk; 173, 214
14. jd;;te;jphp itj;jpak; Kjy; ghfk;/ v!;.gp. bt';fluhrd;/ ru!;tjp E]yfk; Kjy;; gjpg;g[1990 - gf;fk; 27
15. kU.e. nrJuFehjd;/ R{jKdp R{j;jpuk; 110 gHdp jz;lha[jghzp Rthkp jpUf;nfhapy; btspaPL Kjy; gjpg;g[1975 - gf;fk; 6
16. o.Mh;.kfhnjt gz;ojh;/ nuhfeph;za rhuk;/ jhkiu gjpg;gfk; ,uz;lhk; gjpg;g[1995 - gf;fk; 37, 38, 40
17. guuhrnrfuk;/ rpnuhnuhf epjhdk;/ ahH;ghdj;J E]y;btspaPL Kjy; gjpg;g[1934 - gf;fk; 95, 97

18. kU.jpahfuhrd;/ m';fhjpghjk;/ gHdp jz;lha[jghzp Rthkp jpUf;nfhapy; btspaPL Kjy; gjpg;g[1976 - gf;fk; 33, 65, 115

19. runge;jpu itj;jpa Kiwfs; (thjnuhf rpfpr;ir) j";rht{h; ru!;tjp E]yfk;/ ehd;fhk; gjpg;g[1989 - gf;fk; 24

20. runge;jpu itj;jpa Kiwfs; (rpnuhnuhf rpfpr;ir) j";rht{h; ru!;tjp E]yfk;/ _d;whk; gjpg;g[1985 - gf;fk; 28, 57, 119

21. iffz;l mDnghf itj;jpa bgU';;Fws;/ v!;.gp. uhkre;jpud; jhkiu gjpg;gfk; Kjy; gjpg;g[1997 - gf;fk; 4

22. itj;jpa ,uj;jpdk; f.r.KUnfr Kjypahh;/ Fzghlk; _ypif tFg;g[/ Kjy; ghfk;/ ,e;jpa kUj;Jtk; kw;Wk; nAhkpnahgjp Jiw, brd;id -106 Mwhk; gjpg;g[2002 - gf;fk; 14, 164, 199, 205, 207, 213, 216, 238, 241, 351, 366, 417, 431, 463, 547, 750

23. kU.jpahfuhrd;/ Fzghlk;/ jhJ-rPt tFg;g[/ ,uz;lhk; _d;whk; gFjpfs;/ ,e;jpa kUj;Jtk; kw;Wk; nAhkpnahgjp Jiw, brd;id – 106 ehd;fhk; gjpg;g[1992 - gf;fk; 277, 530

24. nt.fe;jrhkp Kjypahh;/ Mtpaspf;Fk; mKj Kiwr; RUf;fk; gHdp jz;lha[jghzp Rthkp jpUf;nfhapy; btspaPL ,uz;lhk; gjpg;g[1975 - gf;fk; 235, 625

25. T.V. Sambasivam Pillai dictionary-Vol. IV- I part (1998) Pages 882, 889, 1995, Vol.V (1994) Page 3869, 1055

26. N. Kandaswamy Pillai - History of Siddha Medicine, Dept. of Indian Medicine and Homoeopathy, Chennai - 106. Second edition 1998 Pages 592 to 605

27. S.V. Subramanian, V.R. Madhavan – Heritage of Tamils – Siddha Medicine Pages 19, 51,171,172,174

Books on Modern Medicine

1. Prof. K.K. Ramalingam, A short practice of Otorhinolaryngology, All India publishers, 3rd edition 2007. Pages 209 to 220

2. Charles W. Cummings, Otolaryngology Head and neck surgery Vol II, Elsevier publishers, 4th edition 2005. Pages 1107 to 1109

3. Martin Burton, Diseases of ENT, Churchil Livingston publishers, 15th edition, 1999 Pages 81 to 97

4. Steven C. Marks, Nasal and sinus surgery, W. B. Saunder's company 1st edition 2000. Pages 31 to 74

5. Johannes long, Clinical anatomy of the nose, nasal cavity & PNS, Thieme Publishers 1989 Pages 117 to 120

6. Thomas R.Van.de.water, Otolaryngology, Thieme publishers, 2006 Pages 472 to 483

7. Andrew Britzer, Office based surgery in Otolaryngology, Thieme publishers, 1998 Pages 343 to 347

8. Thomas Koppe, The paranasal sinuses of higher primates, Quintessence Publishers 1999 Pages 51 to 62

9. Dr. Shyamal Kumar de, Fundamentals of ENT diseases and head and neck surgery, The new book stall, Calcutta 4th edition 1998 Pages 260 to 275

10. Douglas R. Gnepp, Diagnostic surgical pathology of head and neck, W. B. Saunders Company 2001. Pages 79 to 80

11. PL Dhingra, Diseases of ENT – Elsevier, 4th edition 2007 Pages 178 to 190

12. Logan turner, Diseases of ENT, K.M. Varghese Company, 10th edition 1988 Pages 42 to 43

13. K.B. Bhargawa, A short text book of ENT diseases, Usha publication, 3rd edition 1994. Pages 231 to 244

14. Kennedy, Diseases of the sinuses diagnosis and management, B.C. Decker publishers 1st edition 2001. Pages 77 to 114

Other related books

1. Dr. Phulgenda Sinha, Yogic cure for common diseases, Orient publishers 19th edition 2006 Pages 158 to 159

2. Shirley trickett, Heaaches the self-help book, Orient publishers, 2nd edition 2005 Page 118

3. H.K. Bakhru, Complete handbook of nature cure, Jaico publishers, 2nd Edition, 1998 Pages 349 to 350

4. K. Lakshmana sharma, Speaking of nature cure, Sterling publishers 3rd edition 1998 Page 1

5. Dr. S.C. Malhotra, Pharmacological investigations of certain medicinal plants and compound formulations used in Ayurveda and Siddha, central council for research ayurveda and siddha, NewDelhi, 1st edition 1996 Pages 66, 144, 167

6. R.S. Satoskar, Pharmacology & Pharmaco therapeutics, popular publishers 19th edition 2005 Page 4

7. A. Singaravelu Mudaliar, Abithana Chinthamani, the encyclopedia of Tamil Literature, Asian educational services Delhi 1981 Page 371

Medical journal

1.Journal of research in Ayurveda and Siddha, Vol. 23 No 1-2, Jan-June 2002 Central council for research in Ayurveda and Siddha,New Delhi Page 81 to 90

2.Systematic Intranasal Drug Delivery, concepts and applications-Vol II No 1 Jan-Feb 2002 of drug delivery technology-article index.Pages 1-9

* * * * *

TABLE – 3 OBSERVATION OF 20 O.P PATIENTS

Sl. No.	I.P. No	Name	Age/ Sex	Occupation	Treatment started from	TC cells/cmm		DC (BT)%			DC (AT)%			ESR (BT)mm		ESR (AT)mm		Hb	Hb
						BT	AT	P	L	E	P	L	E	1/2 hr	1hr	1/2 hr	1 hr	BT	AT
1	1604	Anandhan	35/M	Ac-Mechanic	11.10.06	9400	9800	56	38	6	60	36	4	5	9	2	3	12	12
2	4187	Raja	28/M	Sales Rep	20.11.06	10000	9700	63	35	2	59	39	2	10	16	5	12	12	12
3	9956	Varadharajan	35/M	Sales Man	27.12.06	9800	9600	62	33	5	62	34	4	12	25	4	8	11	11
4	7741	Vibitha	14/F	Student	19.01.07	7800	8300	39	56	5	40	56	4	8	15	4	11	11.5	11.5
5	8161	Lakshmi	20/F	House Wife	14.02.07	9400	9400	59	35	6	55	41	4	12	25	11	20	10.5	10.5
6	6333	Maheshkumar	13/M	Student	05.03.07	9300	7100	64	31	5	53	43	4	10	21	13	27	12.4	11.2
7	7136	Saranya	20/F	Student	07.03.07	7200	9800	52	36	12	57	38	5	5	12	11	20	12.2	11
8	1022	Kumar	37/M	Fruit Vendor	12.04.07	9800	10000	58	36	6	68	26	6	11	20	4	9	12	11
9	8486	Zennath	16/F	Student	15.04.07	9300	9000	58	40	2	52	44	4	9	18	15	34	11.2	11
10	3834	Dhanalakshmi	31/F	Tailor	20.04.07	10100	9800	63	32	5	58	38	4	20	38	25	52	11	10.5
11	7330	Sagaya mary	20/F	Coolie	30.04.07	8700	10200	41	57	2	60	35	5	3	8	11	25	10.8	10.4
12	7847	Lakshmi	34/F	Labourer	30.05.07	9200	9800	59	35	6	60	33	7	12	25	11	20	10.5	10.5
13	1664	Kalavathy	43/F	Tailor	11.06.07	9300	10100	51	38	11	63	32	5	5	13	12	20	12.5	12.5
14	2593	Karpagam	40/F	Agri Coolie	14.06.07	9700	9800	54	40	6	60	36	4	25	58	10	22	9.8	10
15	8363	Karunamoorthy	52/M	Welder	02.07.07	9700	10200	58	36	6	60	36	4	12	25	11	20	12	12
16	6655	Palani	31/M	Mechanic	24.07.07	10200	9600	60	38	2	64	30	6	20	44	15	30	12	2
17	9459	Jeganathan	27/M	Engineer	01.08.07	10800	9800	63	31	6	62	34	4	5	12	5	12	11	11
18	2802	Senthil	18/M	Student	04.09.07	9600	10200	57	38	5	60	34	6	2	3	2	3	11.5	12.5
19	4653	Bhagyanathan	46/M	Driver	10.09.07	10300	9800	57	39	4	63	33	4	4	11	5	9	12	12
20	2594	Rani	46/F	Servant	28.09.07	9800	9600	57	36	7	58	36	6	42	80	12	26	10	11

BT – Before Treatment AT – After treatment

Cont.

TABLE – 4 OBSERVATION OF 20 O.P. PATIENTS

Sl. No.	O.P. No.	Name	Age/ Sex	Blood mg %			Urine			Motion		Abs. Eos.Cou. cells/cmm		X- ray findings	
				Sug	Urea	Chol	Alb	Sug	Dep	Ova	Cyst	BT	AT	BT	AT
1	1604	Anandhan	25/M	82	20	160	Nil	Nil	1-2 pus	Nil	Nil	502	406	Bil.max.sinusitis	Bil.max.sinusitis
2	4187	Raja	28/M	85	23	170	Nil	Nil	Nil	Nil	Nil	225	220	Bil.max.Sinusitis	Bil.max.sinusitis
3	9956	Varadharajan	35/M	90	20	200	Nil	Nil	1-2 epi	Nil	Nil	850	436	Bil.max.Sinusitis	Bil.max.sinusitis
4	7741	Vibitha	14/F	85	22	182	Nil	Nil	1-2 epi	Nil	Nil	392	388	Bil.max.Sinusitis	Normal
5	8161	Lakshmi	20/F	92	22	185	Nil	Nil	1-2 pus	Nil	Nil	328	306	Bil.max.Sinusitis	Normal
6	6333	Maheshkumar	13/M	90	26	180	Nil	Nil	Nil	Nil	Nil	465	284	Bil.max.frontal sinusitis	Rt.max.sinusitis
7	7136	Saranya	20/F	86	24	185	Nil	Nil	Nil	Nil	Nil	870	410	Rt.max.frontal & Ethmoidal sinusitis	Normal
8	1022	Kumar	37/M	93	22	220	Nil	Nil	1-2 pus	Nil	Nil	465	411	Pan. Sinusitis	Pan.sinusitis
9	8486	Zennath	16/F	86	23	164	Nil	Nil	1-2 epi	Nil	Nil	120	405	Lt. max. & frontal sinusitis	Normal
10	3834	Dhanalakshmi	31/F	84	20	210	Nil	Nil	1-2 epi	Nil	Nil	520	396	Lt. max. sinusitis	Normal
11	7330	Sagaya mary	20/F	82	20	176	Nil	Nil	Nil	Nil	Nil	200	365	Lt. max. sinusitis	Normal
12	7847	Lakshmi	34/F	82	18	162	Nil	Nil	1-2 pus	Nil	Nil	300	354	Bil.max.Sinusitis	Bil.max. Sinusitis
13	1664	Kalavathy	43/F	103	21	167	Nil	Nil	1-2 pus	Nil	Nil	396	428	Bil.max.Sinusitis	Normal
14	2593	Karpagam	40/F	108	22	200	Nil	Nil	1-2 pus	Nil	Nil	380	364	Bil.max.Sinusitis	Normal
15	8363	Karunamoorthy	52/M	95	27	156	Nil	Nil	Nil	Nil	Nil	510	435	Pan. Sinusitis	Bil.max.Sinusitis
16	6655	Palani	31/M	82	22	170	Nil	Nil	1-2 epi	Nil	Nil	316	302	Bil.max.Sinusitis	Normal
17	9459	Jeganathan	27/M	85	18	155	Nil	Nil	1-2 epi	Nil	Nil	306	394	Bil.max.Sinusitis	Normal
18	2802	Senthil	18/M	82	22	159	Nil	Nil	Nil	Nil	Nil	310	280	Bil. frontal & Ethmoidal sinusitis	Bil. frontal & Ethmoidal sinusitis
19	4653	Bhagyanathan	46/M	93	21	219	Nil	Nil	Nil	Nil	Nil	330	390	Bil.max.Sinusitis	Normal
20	2594	Rani	46/F	106	23	218	Nil	Nil	Nil	Nil	Nil	312	228	Rt.max.sinusitis	Rt.max.sinusitis

BT – Before Treatment AT – After Treatment

Cont

TABLE – 1 OBSERVATION OF 20 I.P. PATIENTS

Sl. No	I.P. No.	Name	Age / Sex	Occupation	D.O.A.	D.O.D	TC Cells/cmm		DC (BT)%			DC (AT) %			ESR mm (BT)		ESR mm (AT)		Hb gm/dl	Hb gm/dl
							BT	AT	P	L	E	P	L	E	1/2 hr	1hr	1/2 hr	1 hr	BT	AT
1	370	Meena	53/F	House wife	14.5.07	22.6.07	9200	8100	53	42	5	63	34	3	12	20	12	25	12	12
2	656	Sivakumar	29/M	Coolie	18.6.07	2.7.7.07	9800	10100	58	37	5	64	32	4	4	9	4	10	12	12
3	675	Sundari	47/F	Fish vendor	20.6.07	9.7.07	9000	9200	60	36	4	64	32	4	12	25	5	12	12	12.5
4	738	Kasthuri	48/F	servant	26.6.07	20.7.07	9000	9200	58	36	6	66	31	3	20	42	44	80	10	10.5
5	798	Ranganayagi	55/F	Labourer	3.7.07	25.7.07	9400	9200	58	36	6	60	36	4	44	80	11	20	10	10.5
6	838	Vadivoo	33/F	servant	7.7.07	21.7.07	9200	9000	59	37	4	63	33	4	32	60	5	12	12	12.5
7	867	Vijayalakshmi	41/F	Coolie	11.7.07	26.7.07	9200	10100	64	32	4	62	35	3	34	60	36	60	12	12.5
8	871	Anjalai	50/F	Tailor	11.7.07	6.8.07	10100	9200	65	32	3	58	38	4	20	42	20	40	9.5	9.5
9	873	Anjalai Krishnan	55/F	Agri coolie	11.7.07	6.8.07	10100	10200	60	34	6	67	28	5	24	40	15	32	10.5	10.5
10	927	Varathammal	35/F	Flower vendor	17.7.07	1.8.07	9200	9400	63	30	7	58	38	4	30	60	15	30	12	12
11	1031	Iyyammal	68/F	House Wife	30.7.07	8.9.07	8800	9400	64	32	4	57	39	4	15	30	10	20	12	12
12	1039	Prakash	27/M	Driver	31.7.07	4.9.07	9800	9600	58	36	6	60	36	4	25	52	2	3	12.5	12.5
13	1106	Kanniappan	43/M	Agri Coolie	9.8.07	15.9.07	9800	10200	59	37	4	63	34	3	25	52	12	25	12	12
14	1140	Valli	55/F	House wife	13.8.07	20.9.07	9800	10200	63	33	4	66	30	4	40	76	20	40	12	12
15	1152	Sambayee	50/F	House wife	14.8.07	11.9.07	9800	9800	62	34	4	62	35	3	25	54	11	25	12	12.5
16	1296	Thanammal	40/F	Servant	4.9.07	13.10.07	9800	10200	60	35	5	65	30	5	42	80	32	60	10.5	10.5
17	1315	Rajamani	60/F	House wife	7.9.07	17.10.07	9000	9400	54	42	4	55	41	4	30	60	12	25	10.5	11
18	1417	Vijay kannan	43/M	Coolie	21.9.07	30.10.07	10100	9600	63	31	6	62	34	4	12	25	14	28	11	11
19	1475	Paneer selvam	38/M	Agri (coolie)	28.9.07	4.11.07	9400	9200	68	28	4	68	28	4	9	18	5	12	11	11
20	1508	Lakshmi	50/F	House wife	3.10.07	21.11.07	9600	9400	65	31	4	62	34	4	12	25	4	10	10.5	11

BT-Before Treatment AT – After Treatment

Cont.

TABLE – 2 OBSERVATION OF 20 I.P. PATIENTS

Sl.	I.P.	Sug	Urea	Chol	Urine			Motion		Abs Eos cells/cmm		X Ray findings	
No.	No.	BT	BT	BT	Alb	Sug	Dep cells	Ova	Cyst	BT	AT	BT	AT
1	370	92	25	200	Nil	Nil	1-2 pus	Nil	Nil	464	229	Bil.max.sinusitis	Normal
2	656	73	18	162	Nil	Nil	1-2 pus	Nil	Nil	496	384	Bil.max.sinusitis	Normal
3	675	102	19	179	Nil	Nil	Nil	Nil	Nil	362	368	Lt.max.sinusitis	Mild.haz.in Lt.max.sinus
4	738	78	19	177	Nil	Nil	1-2 pus	Nil	Nil	520	327	Bil.max &front. sinusitis	Normal
5	798	108	19	177	Nil	Nil	1-2 Epi	Nil	Nil	537	392	Bil.max.sinusitis	Normal
6	838	82	72	218	Nil	Nil	1-2 Epi	Nil	Nil	372	370	Rt.max.sinusitis	Mild.haz.in Rt.max.sinus
7	867	100	23	218	Nil	Nil	Nil	Nil	Nil	329	304	Bil.max &ethmoid sinusitis	Bil.max.sinusitis
8	871	93	24	206	Nil	Nil	1-2 Epi	Nil	Nil	303	368	Bil.max &front. sinusitis	Mild.haz.in max &front sinuses
9	873	103	22	179	Nil	Nil	1-2 Epi	Nil	Nil	606	510	Pan.sinusitis	Pan.sinusitis
10	927	106	19	172	Nil	Nil	Nil	Nil	Nil	644	376	Bil.max.Sinusitis	Normal
11	1031	103	27	179	Nil	Nil	1-2 pus	Nil	Nil	352	384	Bil.max.sinusitis	Normal
12	1039	89	18	158	Nil	Nil	Nil	Nil	Nil	588	384	Bil.max.sinusitis	Normal
13	1106	104	19	229	Nil	Nil	1-2 pus	Nil	Nil	392	306	Bil.max &front.sinusitis	Mild.haz.in max & front.sinuses
14	1140	118	24	170	Nil	Nil	1-2 pus	Nil	Nil	344	408	Bil.max. sinusitis	Normal
15	1152	118	23	178	Nil	Nil	1-2 pus	Nil	Nil	392	294	Bil.max &front. sinusitis	Mild.haz.in max & front. sinuses
16	1296	78	23	183	Nil	Nil	Nil	Nil	Nil	494	510	Pan.sinusitis	Pan.sinusitis
17	1315	109	19	185	Nil	Nil	1-2 pus	Nil	Nil	360	376	Lt.max.sinusitis	Normal
18	1417	85	19	178	Nil	Nil	Nil	Nil	Nil	606	384	Bil.max & front sinusitis	Mild.haz.max & front. sinuses
19	1475	105	25	170	Nil	Nil	Nil	Nil	Nil	376	368	Bil.max & front sinusitis	Mild.haz.max & front.sinuses
20	1508	104	22	200	Nil	Nil	Nil	Nil	Nil	384	376	Bil.max.sinusitis	Normal

BT - Before treatment AT - After Treatment